

EXHIBIT B

In the Matter Of:

JOHN SCOTT MAAS vs

BP EXPLORATION & PRODUCTION

VEENA ANTHONY

June 30, 2021



Veena Anthony - June 30, 2021

<p>1 UNITED STATES DISTRICT COURT</p> <p>2 FOR THE MIDDLE DISTRICT OF TENNESSEE</p> <p>3 NORTHEASTERN DIVISION</p> <p>4</p> <p>5 JOHN SCOTT MAAS,)</p> <p>6 Plaintiff,)</p> <p>7)</p> <p>8 VS.) CAUSE NO:</p> <p>9 BP EXPLORATION &) 2:20-CV-00051</p> <p>10 PRODUCTION, INC., &) DEPOSITION OF:</p> <p>11 BP AMERICA) DR. VEENA ANTHONY</p> <p>12 PRODUCTION CO.)</p> <p>13 Defendants.)</p> <p>14</p> <p>15 S T I P U L A T I O N S</p> <p>16</p> <p>17 IT IS STIPULATED AND AGREED, by and</p> <p>18 between the parties through their respective counsel,</p> <p>19 that the deposition of:</p> <p>20 DR. VEENA ANTHONY,</p> <p>21 may be taken before Merit Gilley, Commissioner and</p> <p>22 Notary Public, State at Large, at the Tinsley Harrison</p> <p>23 Towers, 1900 University Boulevard, THT 513D,</p> <p>24 Birmingham, Alabama 35233, on the 30th day of June,</p> <p>25 2021, commencing at approximately 1:02 p.m.</p>	<p>1 A P P E A R A N C E S</p> <p>2</p> <p>3 FOR THE PLAINTIFF:</p> <p>4 WILLIAM KENNERLY BURGER</p> <p>5 Attorney at Law</p> <p>6 Burger, Scott & McFarlin</p> <p>7 12 Public Square North</p> <p>8 Murfreesboro, Tennessee 37130</p> <p>9 615-893-8933</p> <p>10 kenburger@comcast.net</p> <p>11</p> <p>12 FOR THE DEFENDANTS:</p> <p>13 CHAN E. MCLEOD</p> <p>14 HOWARD E. JARVIS</p> <p>15 Attorneys at Law</p> <p>16 Maron, Marvel, Bradley, Anderson & Tardy, LLC</p> <p>17 City Centre</p> <p>18 200 South Lamar Street</p> <p>19 Jackson, Mississippi 39201</p> <p>20 601-812-6630</p> <p>21 cmcleod@maronmarvel.com</p> <p>22 hjarvis@maronmarvel.com</p> <p>23</p> <p>24 ALSO PRESENT:</p> <p>25 Judy Burger</p>
<p>1 IT IS FURTHER STIPULATED AND AGREED that</p> <p>2 the signature to and reading of the deposition by the</p> <p>3 witness is waived, the deposition to have the same</p> <p>4 force and effect as if full compliance had been had</p> <p>5 with all laws and rules of Court relating to the</p> <p>6 taking of depositions.</p> <p>7</p> <p>8 IT IS FURTHER STIPULATED AND AGREED that</p> <p>9 it shall not be necessary for any objections to be</p> <p>10 made by counsel to any questions, except as to form or</p> <p>11 leading questions, and that counsel for the parties</p> <p>12 may make objections and assign grounds at the time of</p> <p>13 the trial, or at the time said deposition is offered</p> <p>14 in evidence, or prior thereto.</p> <p>15 ***</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p>1</p> <p>2 EXAMINATION INDEX</p> <p>3</p> <p>4 Dr. Veena Anthony</p> <p>5 BY MR. MCLEOD 7</p> <p>6 BY MR. BURGER 124</p> <p>7</p> <p>8</p> <p>9</p> <p>10 EXHIBIT INDEX</p> <p>11</p> <p>12 Exhibit Number MAR</p> <p>13 1 Notice of Video Deposition 9</p> <p>14 2 Plaintiff's Rule 26 Expert Disclosure of 17</p> <p>Veena B. Anthony, M.D.</p> <p>15</p> <p>16 3 Study: Heme Oxygenase-1 Protects Corexit 91</p> <p>9500A-Induced Respiratory Epithelial</p> <p>17 Injury across Species</p> <p>18 4 Study: Comparative Toxicity of Two Oil 97</p> <p>Dispersants, Superdispersant-25 and</p> <p>19 Corexit 9527, to a Range of Coastal</p> <p>Species</p> <p>20</p> <p>21 5 Study: Evaluation of Pulmonary and 101</p> <p>Systemic Toxicity of Oil Dispersant</p> <p>22 (Corexit EC9500A) Following Acute</p> <p>Repeated Inhalation Exposure</p> <p>23</p> <p>24</p> <p>25</p>

<p>5</p> <p>1 6 Article: Oil dispersant used in Gulf Oil 103 Spill caaues lung and gill injuries to 2 humans and aquatic animals, also identifies protective enzyme</p> <p>3</p> <p>4 7 Article: Persistent respiratory symptoms 105 in clean-up workers 5 years after the Prestige oil spill.</p> <p>5</p> <p>6 8 Study: Respiratory, Dermal, and Eye 111 Irritation Symptoms Associated with Corexit EC9527A/EC9500A following the 7 Deepwater Horizon Oil Spill: Findings from the GuLF STUDY</p> <p>8</p> <p>9 9 Paper: The Development of Long-Term 117 Adverse Health Effects in Oil Spill Cleanup Workers of the Deepwater Horizon 10 Offshore Drilling Rig Disaster</p> <p>11</p> <p>12 10 Study: The impact of oil spill to lung 121 health - Insights from an RNA-seq study of human airway epithelial cells</p> <p>13</p> <p>14 11 Study: The impact of the Deepwater 122 Horizon Oil Spill upon Lung Health - 15 Mouse Model-Based RNA-seq Analyses</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p>7</p> <p>1 MR. BURGER: Ken Burger For Mr. Maas, 2 the plaintiff.</p> <p>3 MR. MCLEOD: Chan McLeod for the BP 4 parties.</p> <p>5 MR. JARVIS: Howard Jarvis for the BP 6 parties.</p> <p>7 THE VIDEOGRAPHER: Court Reporter, will 8 you please swear in the witness.</p> <p>9 DR. VEENA ANTHONY 10 being first duly sworn, was examined and testified as 11 follows:</p> <p>12 THE COURT REPORTER: Usual stipulations?</p> <p>13 MR. MCLEOD: Yes.</p> <p>14 EXAMINATION</p> <p>15 BY MR. MCLEOD:</p> <p>16 Q Dr. Anthony, my name is Chan McLeod. We 17 met earlier as --</p> <p>18 A Yes.</p> <p>19 Q -- as we moved rooms from -- from one 20 room to the next. I'm going to be asking most of the 21 questions today.</p> <p>22 Let me ask you this: Have you ever been 23 deposed before?</p> <p>24 Have you ever given a deposition like 25 this before?</p>
<p>6</p> <p>1 I, Merit Gilley, a Court Reporter of 2 Birmingham, Alabama, and a Notary Public for the State 3 of Alabama at Large, acting as Commissioner, certify 4 that on this date, as provided by the Federal Rules of 5 Civil Procedure and the foregoing stipulation of 6 counsel, there came before me on the 30th day of June 7 2021, at Tinsley Harrison Towers, 1900 University 8 Boulevard, THT 513D, Birmingham, Alabama 35233, 9 commencing at approximately 1:02 p.m., DR. VEENA 10 ANTHONY, witness in the above cause, for oral 11 examination, whereupon the following proceedings were 12 had:</p> <p>13 DR. VEENA ANTHONY, 14 being first duly sworn, was examined and testified as 15 follows:</p> <p>16 THE VIDEOGRAPHER: This marks beginning 17 of the deposition of Dr. Veena Anthony in the matter 18 of John Scott Maas versus BP Exploration & Production, 19 Incorporated & BP America Production Company. Cause 20 Number 2:20-CV-00051 filed in the United States 21 District Court for the Middle District of Tennessee, 22 Northeastern Division.</p> <p>23 The date is June 30th, 2021. Time is 24 now 1:02 p.m. All attorneys present, will you please 25 state your names and whom you represent.</p>	<p>8</p> <p>1 A I have.</p> <p>2 Q Okay. Do you remember how many times 3 you've -- you've been deposed?</p> <p>4 A Maybe two in my life.</p> <p>5 Q Was that in the context of being an 6 expert witness, or was that in another context?</p> <p>7 A I was -- I don't recall.</p> <p>8 Q Okay. I just -- the way this thing 9 goes, I'm going to ask questions. I'm going to try to 10 ask a question that everybody understands. If you 11 don't understand my question, please let me know, and 12 I'll try to rephrase it so that you can understand 13 what I'm saying.</p> <p>14 If you answer it I'm going to assume 15 that you understood the question that I asked; okay?</p> <p>16 A Uh-huh. Sure.</p> <p>17 Q And I will try to finish my question and 18 let you answer before I ask another question.</p> <p>19 A Okay.</p> <p>20 Q And sometimes it gets conversational, 21 and that's okay. But she's -- she's writing down -- 22 our court reporter is writing down everything we say. 23 And we'll -- we'll try to -- I won't try to step on 24 your toes, and you -- you try not to step on mine.</p> <p>25 A Fine.</p>

<p>9</p> <p>1 MR. MCLEOD: Madame Court Reporter, I'm</p> <p>2 going to have this marked as the first exhibit. It's</p> <p>3 the notice of deposition.</p> <p>4 (Exhibit Number 1 was</p> <p>5 marked for identification.)</p> <p>6 Q Dr. Anthony, this is your notice of</p> <p>7 deposition. Have you seen that before?</p> <p>8 That's the thing that told you that we</p> <p>9 were going to do this here today and all of that.</p> <p>10 That's something that you've seen?</p> <p>11 A Uh-huh.</p> <p>12 Q Okay. Am I correct in saying that you</p> <p>13 are a pulmonologist?</p> <p>14 A I am. Yes.</p> <p>15 Q And are you board certified in pulmonary</p> <p>16 medicine?</p> <p>17 A Yes, I am.</p> <p>18 Q And what does a pulmonologist do?</p> <p>19 A A pulmonologist works in diseases</p> <p>20 related to the lungs and respiratory -- respiratory</p> <p>21 illness. And they might also do some critical care</p> <p>22 work.</p> <p>23 Q Okay. And specifically to what you do</p> <p>24 as a pulmonologist here at UAB, what -- what is your</p> <p>25 role here as a pulmonologist at UAB?</p>	<p>11</p> <p>1 A No.</p> <p>2 Q And you've never been trained in the</p> <p>3 field of industrial hygiene; is that correct?</p> <p>4 A True.</p> <p>5 Q You're not going to offer any opinions</p> <p>6 in this case in the field of industrial hygiene; is</p> <p>7 that correct?</p> <p>8 A Right.</p> <p>9 Q Is it also fair to say that you're not</p> <p>10 an epidemiologist?</p> <p>11 A I am -- I'm trained in the -- in</p> <p>12 environmental medicine. That does require a knowledge</p> <p>13 of epidemiology.</p> <p>14 Q But you're not certified as an</p> <p>15 epidemiologist?</p> <p>16 You didn't go to school to become an</p> <p>17 epidemiologist?</p> <p>18 A No.</p> <p>19 Q Fair to say you're not an expert in</p> <p>20 epidemiology.</p> <p>21 I understand that you use it, but you're</p> <p>22 not an expert in it; is that correct?</p> <p>23 A That is correct.</p> <p>24 Q You mentioned that you do environmental</p> <p>25 medicine.</p>
<p>10</p> <p>1 A I patient -- I see patients with lung</p> <p>2 disease of all kinds as well as patients who have had</p> <p>3 environmental exposures, and I run an environmental</p> <p>4 medicine program. I also am the director of the</p> <p>5 superfund program.</p> <p>6 Q I have your CV. And there was an</p> <p>7 extensive list of publications on that CV.</p> <p>8 Do you have any other publications that</p> <p>9 you've authored that might not be on that CV?</p> <p>10 A There maybe one or two that just came</p> <p>11 out recently --</p> <p>12 Q And --</p> <p>13 A -- since the time. There's one in</p> <p>14 "Science Translational Medicine."</p> <p>15 Q And can you tell what the subject of --</p> <p>16 of that one may be.</p> <p>17 A The subject of that one was lung</p> <p>18 fibrosis and the disease called idiopathic pulmonary</p> <p>19 fibrosis.</p> <p>20 Q And you said there may be another one</p> <p>21 that came out since that CV?</p> <p>22 A No. I think that might be the last one</p> <p>23 that just came out.</p> <p>24 Q Okay. Make sure I understand: You're</p> <p>25 not an industrial hygienist; correct?</p>	<p>12</p> <p>1 Is that any different than what</p> <p>2 occupational medicine would be?</p> <p>3 A It would be part -- occupational</p> <p>4 medicine would be a part of environmental medicine.</p> <p>5 Q Do you consider yourself to be an</p> <p>6 occupation -- occupational medicine specialist?</p> <p>7 A No.</p> <p>8 Q Do you plan on offering any opinions</p> <p>9 that are in the field of occupational medicine --</p> <p>10 A No.</p> <p>11 Q -- in this case?</p> <p>12 Am I right in saying that you're also</p> <p>13 not a toxicologist?</p> <p>14 A I'm not a toxicologist, but I do deal</p> <p>15 with patients who have been exposed to toxic</p> <p>16 whatevers, and so I am familiar with the field of</p> <p>17 toxicology.</p> <p>18 Q You aren't certified in --</p> <p>19 A No.</p> <p>20 Q -- toxicology?</p> <p>21 A No.</p> <p>22 Q You didn't go to school --</p> <p>23 A No.</p> <p>24 Q -- to be a toxicologist?</p> <p>25 A No.</p>

<p>13</p> <p>1 Q Do you plan on offering any opinions in 2 this case that are in the field of toxicology? 3 A No. 4 Q What is your current fee schedule for 5 doing expert work? 6 A What? 7 Q I'm sorry. 8 A So repeat the question. 9 Q How much do you charge per hour to do 10 this expert work that you're -- you're here for today? 11 A Today we'll be charging \$500 dollar per 12 hour. 13 Q And is it different when you're giving a 14 deposition than if you're doing other types of work in 15 the expert field? 16 A No. I can't say that. 17 Q Can you tell me how many hours you've 18 worked so far in this matter? 19 A In this matter? 20 Q Uh-huh. 21 A Gosh, maybe an hour. 22 Q Okay. And I think you said an hour. 23 Is that encompassing reviewing the 24 materials, drafting the report, all of the things that 25 you've done in con -- in the -- in the context of</p>	<p>15</p> <p>1 Q And did you testify on behalf of the 2 plaintiff in that case, or were you testifying on 3 behalf of the defendants? 4 A I think they just asked me what asbestos 5 does and things like that about asbestos. 6 Q Do you remember the law firm that 7 retained you to do that expert work? 8 A No, I don't remember the name. It was a 9 long name. 10 Q Do you remember if they were local 11 here -- 12 A Yes. 13 Q -- in Birmingham? 14 A Yeah, they are. 15 Q Do you recall if the case was in Alabama 16 or if it was in a different jurisdiction? 17 A I think it was an Alabama case. 18 Q And you may not recall, and it's okay. 19 And I just want to make sure I -- I ask the question 20 again to make sure I understand the answer. 21 Is it -- is it your testimony that you 22 don't recall if you were testifying on behalf of the 23 plaintiff or if you were testifying on behalf of the 24 persons that were being sued in the case? 25 A I guess I was testifying on the behalf</p>
<p>14</p> <p>1 working on this case? 2 A True. 3 Q How many times have you served as an 4 expert witness? 5 A Like I said, maybe I think one or two. 6 Q Okay. And can you recall how long ago 7 it was that you would have served as an expert 8 witness? 9 A Maybe one was two, three years ago. 10 That was the most recent one that I believe. 11 Q Most recent would have been two or three 12 years ago? 13 A (Witness nods head.) 14 Q Did you give testimony in that case? 15 A Testimony? Yes. 16 Q You were deposed in that case? 17 A Yes. 18 Q Did the case go to trial and you 19 testified at trial? 20 A No. I -- I sat in this room actually. 21 Q Okay. Do you remember what kind of case 22 that was? 23 A It was something about a broken-down 24 house and asbestos exposure. Asbestos sighting in the 25 -- in the house that was broken down.</p>	<p>16</p> <p>1 of the -- the lawyer was from the people who -- who 2 had the children playing in the broken-down site. 3 Q Okay. So there were some children that 4 were injured, and you testified on behalf of the 5 children as to their injury? 6 A The lawyer. Yeah. 7 Q Okay. 8 A Was their lawyer. 9 Q Am I correct in saying that you have not 10 seen Mr. Maas as a patient in this case? 11 A No -- 12 Q And Mr. -- 13 A -- I have not. 14 Q You've not seen him as a patient? 15 A No. 16 Q Have you met with Mr. Maas in person for 17 this case? 18 A No. Not at all. 19 Q Have you talked to him on the phone? 20 A No. 21 Q Have you spoken with him via Zoom or 22 have any contact with him? 23 A Not at all. 24 MR. MCLEOD: Court reporter, I'll have 25 this marked as Exhibit 2.</p>

<p>17</p> <p>1 Ken, that's her expert report.</p> <p>2 MR. BURGER: That's fine. No objection.</p> <p>3 (Exhibit Number 2 was</p> <p>4 marked for identification.)</p> <p>5 Q Dr. Anthony, I've marked as Exhibit 2</p> <p>6 your expert report that was issued in this matter.</p> <p>7 Do you recognize that document?</p> <p>8 A Yes, I do.</p> <p>9 Q And that is your expert report that you</p> <p>10 submitted in this case?</p> <p>11 A Yes.</p> <p>12 Q Is it fair to say that that expert</p> <p>13 report contains all of the opinions that you plan to</p> <p>14 offer in this case?</p> <p>15 A Yes.</p> <p>16 Q It would also detail the information you</p> <p>17 considered in arriving at your opinion?</p> <p>18 A True.</p> <p>19 Q It contains the information and reliance</p> <p>20 materials that you relied upon and based your opinion</p> <p>21 on?</p> <p>22 A Yes.</p> <p>23 Q Is there any other materials that you</p> <p>24 have reviewed or analyzed that you used to form your</p> <p>25 opinion that aren't listed in that expert report?</p>	<p>19</p> <p>1 Q Did you draft sections of it yourself</p> <p>2 and submit it to somebody else for typing?</p> <p>3 A No. I -- I looked at the parts that --</p> <p>4 where they talked about the work that I've done in the</p> <p>5 field and made certain that they were correct, and --</p> <p>6 Q Okay.</p> <p>7 A -- they are. Yeah.</p> <p>8 Q Doctor, is it fair to say that as a</p> <p>9 pulmonologist you also consider yourself to be a</p> <p>10 scientist, or is there a -- a difference in being a</p> <p>11 pulmonologist and being a scientific?</p> <p>12 A Well, a lot of us academic physicians,</p> <p>13 we do both. We have research as well as we do --</p> <p>14 there are three arms to our work: Research, teaching,</p> <p>15 and clinical care.</p> <p>16 Q And so from the research component, I</p> <p>17 guess especially, that would fall more like a</p> <p>18 scientist than as a clinical physician; is that</p> <p>19 correct?</p> <p>20 A Yes.</p> <p>21 Q When you do your research and you put on</p> <p>22 that -- that scientist hat, would you agree with me</p> <p>23 that -- that there's a scientific method that you use</p> <p>24 in order to reach conclusions?</p> <p>25 A True.</p>
<p>18</p> <p>1 A No.</p> <p>2 Q Okay. Did you author that report in its</p> <p>3 entirety?</p> <p>4 A I signed off on it. Yes.</p> <p>5 Q And -- and you said "signed off on it."</p> <p>6 Tell me -- tell me what that means.</p> <p>7 A I mean, that means that I -- yes. This</p> <p>8 is what I believe to be true.</p> <p>9 Q Okay. Did you yourself draft it, or did</p> <p>10 someone draft it for you, or what -- what happened --</p> <p>11 how -- what are the mechanics of how we came about</p> <p>12 having that report?</p> <p>13 A I -- it -- I mean, I saw the report; and</p> <p>14 I believe it -- what it said. And it was probably</p> <p>15 drafted in depth and detail by perhaps somebody in --</p> <p>16 in Mr. Burger's office.</p> <p>17 Q So am I right in saying that you didn't</p> <p>18 sit down at your computer and actually type out that</p> <p>19 report?</p> <p>20 A No, I did not sit down at my computer</p> <p>21 and type out this report.</p> <p>22 Q Okay. It was submitted to you. You</p> <p>23 read it, and then you signed it.</p> <p>24 But you didn't type it out yourself?</p> <p>25 A I didn't type it out myself.</p>	<p>20</p> <p>1 Q And you follow a scientific method in --</p> <p>2 in the research work that you do?</p> <p>3 A I do.</p> <p>4 Q Would you agree with me that part of</p> <p>5 that scientific method is to evaluate all of the</p> <p>6 available data that exists in order to reach that</p> <p>7 conclusion?</p> <p>8 A Yes.</p> <p>9 Q And you do that in an impartial manner</p> <p>10 -- manner as a scientist in order to evaluate that</p> <p>11 data for accuracy and truthfulness?</p> <p>12 A I -- I don't know that I evaluate them</p> <p>13 for accuracy and truthfulness. But I don't repeat the</p> <p>14 work that is in somebody else's paper. I take it at</p> <p>15 face value because that's already been reviewed by my</p> <p>16 colleague somewhere else.</p> <p>17 Q In order to render an expert opinion</p> <p>18 that requires examination of scientific data, studies,</p> <p>19 other information; you would agree with me that in</p> <p>20 order to render a reliable opinion, you needed to</p> <p>21 review all of the available data that impacts that</p> <p>22 opinion; is that correct?</p> <p>23 A That's true. As much as, you know, you</p> <p>24 do it when -- at a given particular time.</p> <p>25 Q In a matter of looking at an individual</p>

<p style="text-align: right;">21</p> <p>1 who is alleging injury, would that include reviewing 2 medical records? 3 A Yeah. But I'm not -- I don't think I've 4 -- I'm doing that. I mean, I did look at his -- the 5 record which was supplied by somebody called Dr. Wray. 6 And I read the stuff, but I didn't -- I can't comment 7 on it. I mean, I have to take him -- I didn't examine 8 the patient. I wasn't there with the patient, so I 9 can't -- I have -- I just took Dr. Wray's word for 10 what he said. 11 Q And let me parse that out a little bit. 12 Are you saying that you looked at the 13 medical records of Dr. Wray or that you read something 14 that Dr. Wray wrote about those medical records and 15 took that at face value? 16 A I -- I read his physical exam, his 17 report, and his -- his -- the -- the data on -- that 18 he supplied on the patient. And I took that for what 19 it was. 20 Q Did you read Dr. Wray's expert report in 21 this case? 22 A (No response.) 23 Q He -- he issued a report very similar to 24 what you did pursuant to this case. 25 Do you remember if you read his expert</p>	<p style="text-align: right;">23</p> <p>1 A I think it -- it was perhaps Mr. -- 2 Dr. Wray's testimony or -- or report or the -- I think 3 that -- that was it. Yes. That was his -- his -- 4 where I read that. Yeah. 5 Q Do you have any knowledge about the 6 Vessels of Opportunity Program in which Mr. Maas was 7 working? 8 A No. 9 Q Do you know how many days specifically 10 he was on the Gulf? 11 A Two months ago. Again, I -- again, this 12 is what I've read: Two months. 13 Q Do you know where in the Gulf of Mexico 14 Mr. Maas worked in the cleanup efforts? 15 A I don't know. 16 Q Do you know what type of boat Mr. Maas 17 was on? 18 A No. 19 Q Do you know the number of crew members 20 that he might have worked with on that boat? 21 A No. 22 Q And you said you think it was two 23 months, but do you know specifically what days out of 24 those two months he would have worked in the cleanup? 25 A No.</p>
<p style="text-align: right;">22</p> <p>1 report? 2 A I think I did. 3 Q I know you testified earlier that 4 Mr. Maas was not your patient and you haven't spoken 5 with him. So I'm going to ask you some questions 6 about his specific work. And it maybe that -- that 7 that's outside of what you reviewed. And if it is, 8 okay; but I want to -- I want to ask. 9 Do you know specifically what type of 10 work Mr. Maas performed in the Gulf cleanup? 11 A Just what I read. 12 Q And -- 13 A That he worked for a period of two 14 months and was exposed to 12 hours a day over a period 15 of two months where they sprayed Corexit over his boat 16 or whatever he was working on. 17 Q And -- 18 A And -- 19 Q I'm sorry. I didn't mean to interrupt. 20 A That's -- that's all I know. 21 Q And when you said you -- you read that, 22 what -- what is it that you read that -- that told you 23 that? 24 What material did you look at that -- 25 that gave you that information?</p>	<p style="text-align: right;">24</p> <p>1 Q Do you know the specific tasks that 2 Mr. Maas was performing in the cleanup work? 3 A I believe that was to put those -- you 4 know, those -- those -- to corral the oil in one 5 particular space, things like that. 6 Q And that, again, comes from something 7 that you -- 8 A Read. 9 Q -- you read that told you that? 10 A Yes. 11 Q Other than what you've read, do you have 12 any other independent information about how many hours 13 Mr. Maas would have been working in the Gulf? 14 A No. 15 Q Doctor, you said earlier that you are 16 not a toxicologist, but you do understand some -- some 17 toxicology. 18 Would you agree with me -- or would you 19 agree, rather, with the toxicological premise that 20 dose is everything when determining if a substance can 21 create a potential harm? 22 A I think there are some caveats to that. 23 I think the dose, if it's distributed over a large 24 area of the body, can cause a different type of damage 25 than if it is concentrated in a particular area. Then</p>

<p>25</p> <p>1 the same dose can cause harm right there.</p> <p>2 Q But dose --</p> <p>3 A Yes.</p> <p>4 Q -- whether in large or small quantities,</p> <p>5 is very important --</p> <p>6 A Yes.</p> <p>7 Q -- in determining harm?</p> <p>8 A I think as a generic statement, that</p> <p>9 would be true.</p> <p>10 Q And -- and you're a pulmonologist.</p> <p>11 You -- you prescribe medicine; correct?</p> <p>12 A True.</p> <p>13 Q And when you prescribe medicine, is it</p> <p>14 fair to say that you prescribe on a dose basis?</p> <p>15 A True.</p> <p>16 Q And that's because not enough of a</p> <p>17 medicine may not --</p> <p>18 A Work.</p> <p>19 Q -- do the help that you want; too much</p> <p>20 might create harm?</p> <p>21 A Absolutely right. Uh-huh.</p> <p>22 Q Would you agree with me that there are</p> <p>23 some substances that in small amounts do not produce</p> <p>24 harm but in large amounts may be very harmful?</p> <p>25 A That's true.</p>	<p>27</p> <p>1 Q Is there any other chemicals or</p> <p>2 substances that you think might have caused Mr. Maas</p> <p>3 harm in your opinion that are at issue in this case?</p> <p>4 A I don't know if they're -- they're an</p> <p>5 issue in this case, but I believe that crude oil</p> <p>6 exposure can also cause damage.</p> <p>7 Q Do you have an understanding if Mr. Maas</p> <p>8 was exposed to crude oil or not?</p> <p>9 A Just from my reading what -- of what was</p> <p>10 given to me. I believe if you're corraling that</p> <p>11 stuff and something -- there was something also about</p> <p>12 clothes being drenched in Corexit and oil.</p> <p>13 Q Let's take Corexit first.</p> <p>14 Would you agree with me that in order to</p> <p>15 determine whether or not Corexit caused harm, you need</p> <p>16 to know the dose that an individual was exposed to to</p> <p>17 that Corexit?</p> <p>18 MR. BURGER: And let me object to the</p> <p>19 form. You can answer.</p> <p>20 Q Before you do, let me see if I can clean</p> <p>21 the question up.</p> <p>22 Would you agree with me that you also --</p> <p>23 with any substance, would you agree with me that you</p> <p>24 need to know the dose in order to determine if that</p> <p>25 substance can cause harm?</p>
<p>26</p> <p>1 Q Got to have water to live; too much</p> <p>2 water can kill you?</p> <p>3 A Yes.</p> <p>4 Q Same thing with salt; correct?</p> <p>5 A True.</p> <p>6 Q Oxygen?</p> <p>7 A True.</p> <p>8 Q Now, in this case -- and we're going to</p> <p>9 go through your report, so this is preliminary to us</p> <p>10 doing that. I want to make sure I understand.</p> <p>11 What is your opinion as to what</p> <p>12 substances are at issue in this case?</p> <p>13 A I believe it's Corexit.</p> <p>14 Q And do you -- what is -- what is</p> <p>15 Corexit?</p> <p>16 A Well, it's a dispersant. Corexit 9500 I</p> <p>17 believe.</p> <p>18 Q And what does a dispersant do?</p> <p>19 A It breaks up things into micelles and</p> <p>20 can cause other changes if it -- depends on where it</p> <p>21 lands.</p> <p>22 Q Is there any other substance or</p> <p>23 chemicals at issues other than Corexit in your opinion</p> <p>24 in this case?</p> <p>25 A I don't understand the question.</p>	<p>28</p> <p>1 MR. BURGER: And excuse me. Same</p> <p>2 objection.</p> <p>3 A Yes and no. I agree with you; but, for</p> <p>4 example, if you get, say, soap in your eye, you know</p> <p>5 it's going to burn. And then if you get the same dose</p> <p>6 on your skin, you may do fine.</p> <p>7 Q Okay. Well, let's talk about it in</p> <p>8 specific terms of Corexit.</p> <p>9 Would you agree with me that you need to</p> <p>10 know the amount of Corexit that an individual was</p> <p>11 exposed to to determine whether or not that Corexit</p> <p>12 could cause harm?</p> <p>13 A I'd like to know where he was exposed to</p> <p>14 it; location.</p> <p>15 Q Okay. On the skin.</p> <p>16 Would you need to know how much Corexit</p> <p>17 he was exposed to as to --</p> <p>18 A I can -- I --</p> <p>19 Q -- whether or not it could cause harm?</p> <p>20 A I think that's -- that's a fine -- broad</p> <p>21 -- as a broad statement, I think you're right.</p> <p>22 Q Okay. Inhalation.</p> <p>23 Would you need to know how much Corexit</p> <p>24 he inhaled in order to determine whether or not it</p> <p>25 could cause harm?</p>

<p>29</p> <p>1 A I think a very small amount of that 2 could cause a significant harm. Corexit, period, if 3 exposed to the airways, would cause significant harm 4 of the airways. 5 Q What constituents of Corexit are causing 6 that harm if you know? 7 A I don't. 8 Q You just say Corexit, but you don't know 9 specifically what part of the Corexit is causing the 10 harm? 11 A True. It's not what I -- anything that 12 I've analyzed. Yeah. 13 Q So do you have an opinion as to what 14 exposure levels or what dose of Corexit needed to be 15 present in order to state that harm could occur? 16 A I don't know what extent -- or what his 17 exposures were quantitatively. But all I know is that 18 he was exposed to it on a -- supposedly on a regular 19 basis for a period -- over a period of two months. 20 Q Is it fair to say that you didn't do any 21 analysis to determine how much Corexit Mr. Maas would 22 have been exposed to? 23 A I -- I don't know Mr. Maas. Yeah. 24 Q Okay. And you've said quantitatively. 25 Is -- is it fair to say that you didn't</p>	<p>31</p> <p>1 Q Is it also fair to say that you do not 2 have any scientific evidence that Mr. Maas was ever 3 around the spraying of Corexit? 4 A Just -- 5 MR. BURGER: Object to the form. 6 A Just what I read. 7 Q Just what you read in -- in the -- in 8 the narratives -- 9 A Uh-huh. 10 Q -- that you were provided? 11 A Uh-huh. 12 Q Are you aware of the exposure limits for 13 Corexit? 14 A Exposure limits? 15 Q The -- the regulatory limits, what -- 16 what a -- 17 A I don't know. 18 Q -- what a person is allowed -- I'm 19 sorry. I didn't mean to interrupt you. 20 A My apologies. I -- I don't remember 21 them. 22 Q Okay. Do you -- you think there are 23 exposure limits that are regulatory limits for 24 Corexit, but you just don't remember what they are? 25 A Yeah. I haven't seen them.</p>
<p>30</p> <p>1 do a quantitative dose reconstruction analysis for 2 this case? 3 A I did not. 4 Q Okay. As a pulmonologist, that's 5 probably not something you would know how to do; is 6 that correct? 7 A True. 8 Q Have you seen any quantitative dose 9 reconstruction analysis for Mr. Maas in this case? 10 A No. 11 Q If we were going to say that an 12 individual was harmed by a substance, we would need to 13 know the quantity of that substance that somebody was 14 exposed to; is that correct? 15 A Like I said, in a -- in a -- as a broad 16 statement, that's probably true. But as I explained, 17 it depends on where it lands. 18 Q And I think you've said this, and I just 19 want to make sure I understand. 20 In -- in this case specifically as to 21 Mr. Maas, you don't know the levels or dose of Corexit 22 that Mr. Maas would have been exposed to while -- 23 A I do not. 24 Q -- doing his Gulf cleanup work? 25 A I do not. Sorry.</p>	<p>32</p> <p>1 Q Okay. As we sit here today, is it 2 really just your speculation and conjecture that 3 Mr. Maas was ever exposed to Corexit? 4 MR. BURGER: Object to the form. 5 A Yes. As I'm going off what I was -- 6 what I read. I mean, but I can't say that I 7 personally know that Mr. Maas was exposed to it or 8 not. 9 Q Do you have any knowledge about the time 10 frame during the Gulf cleanup of when Corexit was 11 used? 12 A I -- I mean, if I remember -- I'm trying 13 to remember The New York Times saying. I think it was 14 in the first few months. 15 Q Okay. 16 A Several months. 17 Q And I think earlier you -- you gave me a 18 -- a number after Corexit. 19 What -- can you tell me: Is their -- 20 A 9500. And then they used another name 21 -- another number attached to it. 22 Q Do you draw any distinction between 23 Corexit 9500 and the other type of Corexit? 24 A I haven't tested the other kind of 25 Corexit myself, so I can't say anything about it.</p>

<p>33</p> <p>1 Q And the type of Corexit that you</p> <p>2 tested --</p> <p>3 A True.</p> <p>4 Q -- was 9500; is that -- is that correct?</p> <p>5 A True.</p> <p>6 Q Were you aware that during the response</p> <p>7 efforts in the Gulf that there were guidelines that</p> <p>8 were in place for the spraying of Corexit?</p> <p>9 Did you know that?</p> <p>10 A I -- I think -- well, I -- I don't know.</p> <p>11 I -- I guess I should say I don't know them.</p> <p>12 Q For example, were -- were you aware that</p> <p>13 the guidelines did not allow any spraying of Corexit</p> <p>14 within two nautical miles of any boat?</p> <p>15 A No, I'm not aware of that. But I also</p> <p>16 remember from that time reading about the effects of</p> <p>17 wind and breeze on how these dispersants were sprayed</p> <p>18 and then, by winds and breeze, were carried to other</p> <p>19 places. And people talking about that even on land,</p> <p>20 they got it on their outdoor patios or something like</p> <p>21 that. But that's just what I've read in the New York</p> <p>22 Times.</p> <p>23 Q And that's just anecdotal evidence;</p> <p>24 correct?</p> <p>25 A Just my reading. Yes.</p>	<p>35</p> <p>1 is that correct?</p> <p>2 A Yes.</p> <p>3 Q And do you have any knowledge about how</p> <p>4 those response efforts to that oil spill were</p> <p>5 structured?</p> <p>6 A (No response.)</p> <p>7 Q For example, do you know who was in</p> <p>8 control of the cleanup efforts?</p> <p>9 A Well, FEMA was involved that I know.</p> <p>10 But I -- I don't know who specifically was responsible</p> <p>11 for it.</p> <p>12 Q Have you ever heard the phrase "Unified</p> <p>13 Area Command"?</p> <p>14 A I think I may have. Yeah.</p> <p>15 Q And were you aware that the Unified Area</p> <p>16 Command comprised the coast guard -- U.S. Coast Guard,</p> <p>17 the EPA, and the National Oceanic and Atmospheric</p> <p>18 Administration.</p> <p>19 Does that ring a bell at all?</p> <p>20 A Uh-huh.</p> <p>21 Q And they were in control of --</p> <p>22 A Right.</p> <p>23 Q -- the response efforts; is that</p> <p>24 correct?</p> <p>25 A Yes.</p>
<p>34</p> <p>1 Q That's not science; correct?</p> <p>2 A That's not science.</p> <p>3 Q Do you have any knowledge about the in</p> <p>4 situ burning of the oil during the response effort?</p> <p>5 A I mean, I know it was burned. But I --</p> <p>6 I don't know the answer.</p> <p>7 Q Do you know the locations of where the</p> <p>8 burning took place?</p> <p>9 A No.</p> <p>10 Q Do you know the locations of where the</p> <p>11 Corexit spraying took place?</p> <p>12 A No. In the Gulf; right? But -- but</p> <p>13 specifically where the -- which places and how many</p> <p>14 times, I don't know that.</p> <p>15 Q Well, for example, you don't know how</p> <p>16 far away Mr. Maas would have been from the spraying of</p> <p>17 Corexit in the Gulf?</p> <p>18 A No, I don't know that.</p> <p>19 Q We've talked about -- or we've touched</p> <p>20 on this, but let -- let me go back and -- and maybe</p> <p>21 put some structure to this.</p> <p>22 We're talking about the Deepwater</p> <p>23 Horizon oil spill response efforts; correct?</p> <p>24 A (Witness nods head.)</p> <p>25 Q And Deepwater Horizon happened in 2010;</p>	<p>36</p> <p>1 Q Were you also aware that the</p> <p>2 Occupational Safety and Health Organization served as</p> <p>3 an active advisor in the response efforts?</p> <p>4 Did you know that?</p> <p>5 A Yeah.</p> <p>6 Q Did you know that the Centers for</p> <p>7 Disease Control also served as an active advisor?</p> <p>8 A Yes.</p> <p>9 Q And the National Institute for --</p> <p>10 A Health?</p> <p>11 Q -- Occupational Safety and Health?</p> <p>12 A Yes.</p> <p>13 Q They also served as an active --</p> <p>14 A Uh-huh.</p> <p>15 Q -- active advisor?</p> <p>16 Do you -- do you remember or do you know</p> <p>17 where the actual wellhead was that -- where it was</p> <p>18 located when the oil was released, where Deepwater</p> <p>19 Horizon sat?</p> <p>20 A Just from what I read about it in The</p> <p>21 New York Times.</p> <p>22 Q Do you know how far away it was from the</p> <p>23 Mississippi Gulf Coast, for example?</p> <p>24 A No.</p> <p>25 Q Do you know the date where there was the</p>

<p style="text-align: right;">37</p> <p>1 last observation of any recoverable oil on the ocean 2 surface coming out of Deepwater Horizon spill? 3 A No. But I know it was a long time until 4 it was shut down. 5 Q Do you know how far below the surface of 6 the water where the oil was leaking? 7 A (No response.) 8 Q In other words, do you know how deep the 9 ocean was at -- at the point of -- of where the 10 wellhead broke? 11 A No. 12 Q If I told you it was about a mile deep, 13 would you have any reason to disagree with me about 14 that? 15 A No. 16 Q You know what OSHA is; correct? 17 A Yeah. 18 Q And you know what NIOSH is? 19 A Uh-huh. 20 Q Did you know that both OSHA and NIOSH 21 conducted testing for levels of Corexit and other 22 chemicals that may have been present in the Gulf 23 during the cleanup? 24 A Do I know for sure they did it? I'm -- 25 I'm assuming they did it because they were involved in</p>	<p style="text-align: right;">39</p> <p>1 Q Do you have any idea how many samples 2 were taken -- 3 A No. 4 Q -- during the cleanup response? 5 A No. 6 Q If I told you it was over 130,000 7 samples, would you have any reason to dis -- disagree 8 with me? 9 A No. 10 Q Did you look at any of those 130,000 11 samples of water or air in formulating your opinion 12 for this case? 13 A No. 14 Q Were you aware that that sampling 15 information, the results from both the air and water 16 testing, was publicly available, that it existed in 17 the public domain? 18 A It's possible. But, yes, I think it 19 came; but it was difficult to get initially. It was a 20 lot of -- well, we couldn't find any information on 21 what Corexit contained. And we tried very hard to 22 find that, but they wouldn't tell us. 23 Q And you said "initially." 24 What time frame were you looking at -- 25 A We were --</p>
<p style="text-align: right;">38</p> <p>1 it, but I -- I don't know. 2 Q Have you ever examined any of the data 3 from the sampling that either OSHA -- 4 A No. 5 Q -- or NIOSH did? 6 A No. 7 Q You haven't analyzed any of those 8 results from the sampling or testing data that they 9 performed? 10 A No. 11 Q Were you aware that BP also conducted 12 air and water sampling during the cleanup efforts? 13 A I would hope so. Yeah. 14 Q Did you ever examine any of the BP 15 sampling results? 16 A No. 17 Q Were you aware that the U.S. Coast Guard 18 also was responsible for taking sampling and testing 19 data during the cleanup response? 20 A No. 21 Q Did you ever examine any of the U.S. 22 Coast Guard -- 23 A No. 24 Q -- data? 25 A Sorry. No.</p>	<p style="text-align: right;">40</p> <p>1 Q -- it when it was hard? 2 A We were working in -- on this in 2010 3 and 2011. I think 2011 more than 2010. And at that 4 time, I couldn't get any information on the analysis 5 of Corexit. 6 Q Have you looked since -- 7 A Nalcor. I believe is some company 8 called Nalcor. 9 Q Have you looked for the sample data in 10 the last five years? 11 A I have -- I'm not working in that -- 12 exactly in that field right now. I'm not working with 13 Corexit right now. 14 Q We -- we talked about -- I think I 15 actually asked you a question about exposure limits. 16 And -- and so let me -- let me go back to that for a 17 second. 18 Q Do you -- do you know what an 19 occupational exposure limit is -- 20 A I do. Yes. 21 Q -- an OEL? 22 A Yes. 23 Q And -- and what is that? 24 A It's the limit that you will get damage, 25 the upper limit of what you would get damage.</p>

<p style="text-align: right;">41</p> <p>1 Q And do you know what the OEL is for</p> <p>2 Corexit?</p> <p>3 A No.</p> <p>4 Q Are you familiar with the term</p> <p>5 "permissible exposure limit," PEL?</p> <p>6 A Yeah.</p> <p>7 Q And what is a PEL?</p> <p>8 A Is the amount where you probably</p> <p>9 wouldn't get damage.</p> <p>10 Q Okay. What about a recommended exposure</p> <p>11 limit? Are you aware of what a recommended exposure</p> <p>12 limit is?</p> <p>13 Have you ever heard of an REL?</p> <p>14 A No.</p> <p>15 Q Is it fair to say that you do not know</p> <p>16 the PEL's or the REL's for Corexit?</p> <p>17 A No, I don't.</p> <p>18 Q And you don't know as we sit here today</p> <p>19 whether or not Mr. Maas would have encountered Corexit</p> <p>20 at any level that exceeded the OEP, PEL, or REL's that</p> <p>21 are -- exist?</p> <p>22 Mr. Burger: Object to the form.</p> <p>23 A I -- I can't quantitate how much he was</p> <p>24 exposed to.</p> <p>25 Q Okay. Did you also -- or were you also</p>	<p style="text-align: right;">43</p> <p>1 and REL's established for Corexit, would you agree</p> <p>2 with me that there is a level of Corexit upon which</p> <p>3 harm should not occur?</p> <p>4 MR. BURGER: Object to the form.</p> <p>5 A No.</p> <p>6 Q You would not agree with me?</p> <p>7 A No.</p> <p>8 Q So you think any level is harmful?</p> <p>9 A I think it depends on where it lands.</p> <p>10 Q Okay. And that's based on what?</p> <p>11 What -- what -- what are you --</p> <p>12 A Like I said, if you get soap in your</p> <p>13 eye -- it's the same analogy that if you get soap in</p> <p>14 your eyes, then it doesn't -- it's going to burn. You</p> <p>15 get conjunctivitis and the eye is red. But if you get</p> <p>16 soap on the skin, it's perfectly okay.</p> <p>17 Q Okay. So for you, it's more important</p> <p>18 to know pathway of exposure than limit of exposure?</p> <p>19 A Location and, yes, pathway.</p> <p>20 Q Do you have any scientific evidence as</p> <p>21 to the pathway of exposure for Mr. Maas?</p> <p>22 A I -- I didn't examine him. I don't know</p> <p>23 how it was.</p> <p>24 MR. JARVIS: By the way, Dr. Anthony, my</p> <p>25 partner was remiss in telling you we run these</p>
<p style="text-align: right;">42</p> <p>1 aware that OSHA has limits to occupational exposure to</p> <p>2 certain substances?</p> <p>3 A Yes, they do. Yes.</p> <p>4 Q Do you know whether or not OSHA's limits</p> <p>5 -- or do you know what OSHA's limit is -- OSHA's</p> <p>6 limits were as it -- as it pertains to Corexit?</p> <p>7 A No.</p> <p>8 Q As a pulmonologist, do you have any</p> <p>9 ability to calculate what the dose would be in</p> <p>10 relation to an EOL, a PEL, or an REL?</p> <p>11 A I can do that in -- in the lab, but I</p> <p>12 can't tell you what this one particular person was</p> <p>13 exposed to.</p> <p>14 Q Okay. And I guess if you haven't looked</p> <p>15 at any of the sampling data, you're not aware that all</p> <p>16 of the sampling data showed up as below the acceptable</p> <p>17 exposure limits or as nondetects?</p> <p>18 A I didn't understand the question.</p> <p>19 Q Well, do you know -- let me -- let me</p> <p>20 start over.</p> <p>21 Since you haven't examined the sampling</p> <p>22 data, you don't know what the results of that sampling</p> <p>23 data showed; is that correct?</p> <p>24 A Uh-huh. True.</p> <p>25 Q Okay. Since there are OEL's and PEL's</p>	<p style="text-align: right;">44</p> <p>1 depositions according to the schedule of the witness.</p> <p>2 So if at any point in time you feel like you need a</p> <p>3 break --</p> <p>4 THE WITNESS: Okay.</p> <p>5 MR. JARVIS: -- you know, then you tell</p> <p>6 Mr. McLeod. And remember who the gentleman is. And</p> <p>7 I'm from Tennessee, not from Mississippi.</p> <p>8 THE WITNESS: All right.</p> <p>9 MR. JARVIS: I hope all of that is on</p> <p>10 the record.</p> <p>11 MR. MCLEOD: Thanks, partner.</p> <p>12 MR. JARVIS: You're welcome.</p> <p>13 Q (By Mr. McLeod) Dr. Anthony, would you</p> <p>14 like to take a break, or are you good to go?</p> <p>15 A I'm good.</p> <p>16 Q I want to turn to your expert report if</p> <p>17 you -- if you would.</p> <p>18 You are a professor of medicine at UAB;</p> <p>19 correct?</p> <p>20 A Yes.</p> <p>21 Q And your field is pulmonology?</p> <p>22 A Yes.</p> <p>23 Q And that also stretches into critical</p> <p>24 care if I understood you correctly?</p> <p>25 A Uh-huh. Yes.</p>

<p>45</p> <p>1 Q You have an active medical license?</p> <p>2 A Yes.</p> <p>3 Q Are you licensed to practice medicine in</p> <p>4 Tennessee?</p> <p>5 A No.</p> <p>6 Q Are you licensed to practice medicine in</p> <p>7 any other state other than Alabama?</p> <p>8 A Yes.</p> <p>9 Q And what states are those?</p> <p>10 A Florida, Indiana, and Colorado.</p> <p>11 Q Are you currently treating any patients</p> <p>12 for asthma?</p> <p>13 A Yes.</p> <p>14 Q Do you know how many patients you have</p> <p>15 that you're currently treating for asthma?</p> <p>16 A From the top of my head? Gosh, I mean,</p> <p>17 I don't know. 30, 40.</p> <p>18 Q Have you -- or are you currently</p> <p>19 treating any patient that has asthma as a result from</p> <p>20 exposure to Corexit?</p> <p>21 A No.</p> <p>22 Q Have you ever treated any person for</p> <p>23 asthma that had it as a result of exposure to Corexit?</p> <p>24 A Two. Two patients.</p> <p>25 Q Two patients?</p>	<p>47</p> <p>1 or other airways disease.</p> <p>2 Q We talked about the asbestos case that</p> <p>3 you testified in, and you thought it may have been two</p> <p>4 or three years ago.</p> <p>5 I'm -- I'm looking at --</p> <p>6 A More than three years ago.</p> <p>7 Q Yeah. I'm looking at paragraph three.</p> <p>8 A Uh-huh.</p> <p>9 Q And you say that you -- you haven't done</p> <p>10 any testimony in litigation in the last four years.</p> <p>11 That -- that's still a correct</p> <p>12 statement?</p> <p>13 A Yeah. Probably. Yeah. It's been a</p> <p>14 long time that I saw that.</p> <p>15 Q And I know you testified in -- in what</p> <p>16 you thought was an asbestos case, and you thought</p> <p>17 there may have been one more.</p> <p>18 But you can't recall what that type of</p> <p>19 case was; is that -- is that right?</p> <p>20 A Yeah. I don't remember that one.</p> <p>21 Q Okay. Do you remember when you were</p> <p>22 contacted by Mr. Burger to be an expert in this case?</p> <p>23 A I mean, a couple of months or three</p> <p>24 months ago maybe.</p> <p>25 Q And --</p>
<p>46</p> <p>1 A At -- at UAB. Yeah. But this is long</p> <p>2 time ago, you know, at that time frame.</p> <p>3 Q That was -- are you saying back in --</p> <p>4 A 2000 --</p> <p>5 Q -- 2010?</p> <p>6 A Yeah.</p> <p>7 Q Your report in paragraph two talks about</p> <p>8 you've been involved in pulmonary research for more</p> <p>9 than 20 years; is that correct?</p> <p>10 A 30 years now. I'm an old woman. Yes.</p> <p>11 Q Almost 30 years?</p> <p>12 A Yes. I'm an old woman I said. Yes.</p> <p>13 Q And is it fair to say that that research</p> <p>14 has not been focused on asthma?</p> <p>15 A No. It's focused on airways disease,</p> <p>16 which asthma is one of them.</p> <p>17 Q Well, when I looked through your CV; it</p> <p>18 appeared to that me that there was only one paper that</p> <p>19 you had published that was specific to asthma.</p> <p>20 Is that not correct?</p> <p>21 A I mean, I work on airways disease and my</p> <p>22 -- I have my grants on airways disease. And so I</p> <p>23 don't know that it's going -- the word "asthma" may</p> <p>24 not be in the title, but we look at the damage done to</p> <p>25 the -- to the lungs and in leading to asthma or COPD</p>	<p>48</p> <p>1 A I can't tell you when I did. I can't</p> <p>2 remember exactly.</p> <p>3 Q Do you recall what specifically he asked</p> <p>4 you to do in this case?</p> <p>5 A To provide -- to provide testimony on</p> <p>6 the research work that I've done related to Corexit</p> <p>7 and lung disease, on the research side of things</p> <p>8 predominantly.</p> <p>9 Q And you're going to offer an opinion on</p> <p>10 both general and specific causation in this case?</p> <p>11 A I'm -- I'm answering your questions,</p> <p>12 whatever you ask.</p> <p>13 Q Well, I'm --</p> <p>14 A My goal is to offer, if you want, if you</p> <p>15 ask me questions leading up to research in -- in</p> <p>16 Corexit, I can tell you what I did.</p> <p>17 Q Well, I'm -- I'm reading paragraph four.</p> <p>18 A Uh-huh.</p> <p>19 Q And it -- it says --</p> <p>20 A Or general and specific related.</p> <p>21 Uh-huh.</p> <p>22 Q And so I'm -- I'm trying to understand</p> <p>23 exactly what those opinions are going to be.</p> <p>24 So do you know what I mean when I say</p> <p>25 "general causation"?</p>

<p>49</p> <p>1 A Not -- I'm trying to read. Medical 2 causation issues. Yes, I can. I think I can. 3 Q And so you -- you think you're going to 4 be able to offer an opinion on general causation in 5 this case? 6 A Maybe you want to define "general" for 7 me again. 8 Q Well, I think I'm going to let you 9 define it for me. 10 What -- what do -- what do you think 11 general causation means? 12 MR. BURGER: Object to the form. 13 A General causation? I would assume that 14 it means -- in this case it means that -- that Corexit 15 can cause severe asthma and restrictive lung disease 16 and, specifically, that -- that in this particular 17 case that he was exposed to this much and -- and was 18 involved in the cleanup of crude oil, that it's 19 possible in my opinion that he could have -- his lung 20 disease could be caused by his exposure to Corexit. 21 Q Where did you get the phrase that's here 22 in quotation marks "severe asthma and restrictive lung 23 disease"? 24 A From the report by Dr. Wray. 25 Q So that's not your diagnosis of</p>	<p>51</p> <p>1 Q Is that the only publication that you 2 have authored that deals with Corexit? 3 A There may have been some abstracts on it 4 as well that we submitted and presented in national 5 meetings. In fact, I know, yes, there were. 6 Q And when you say "abstracts," explain 7 what you mean by abstracts. 8 A I mean like presentations like you give 9 a PowerPoint presentation, or you have somebody 10 stand -- my student may have stood by a poster board 11 where he had all the data on the work that we did. 12 Q So not published in a peer-reviewed -- 13 A Yes. Not published in a peer-reviewed 14 journal. 15 Q Okay. The only one that fits that 16 description is the one we just talked about. 17 And did I say that right, by the way? 18 Is it -- is it Heme Oxygenase? 19 A Heme Oxygenase. 20 Q Heme -- Heme Oxygenase. 21 A (Witness nods head.) 22 Q Okay. I may just call that HO1. 23 How about that? 24 A Fine. Yes. 25 Q Other than the research you did for this</p>
<p>50</p> <p>1 Mr. Maas. 2 That is Dr. Wray's diagnosis of 3 Mr. Maas; is that correct? 4 A It is true. 5 Q And -- strike that. 6 Turn to paragraph six. You -- you talk 7 about some of the opinions that you're going to have. 8 And -- and one of the things you talk about is -- and 9 I'm going to kind of read this specifically. On the 10 top of page three it says, "set forth in professional 11 publications." 12 And I just want to make sure: Are those 13 the professional publications that you cite later on 14 in your report? 15 A Which publications? My publications? 16 Yes. 17 Q And -- and I know that there's one 18 publication that you provided to us, and I'm going to 19 -- I'm going to hope I pronounce this right. Please 20 correct me if I pronounce it wrong. But "Heme 21 Oxygenase 1 Protects Corexit 9500A-Induced Respiratory 22 Epithelial Injury Across Species." 23 Is that one of the papers that you're 24 talking about? 25 A Yes.</p>	<p>52</p> <p>1 HO1 paper that we just mentioned, have you conducted 2 any other research on Corexit? 3 A Uh-huh. 4 Q And it just didn't end up in a 5 peer-reviewed journal? 6 A No. I didn't -- we didn't write the 7 paper. I -- I've been involved with somebody who was 8 doing a thesis on it and, you know, getting a PhD 9 degree on Corexit. And so -- 10 Q It just wasn't published? 11 A It's probably published. They come out 12 like in -- I don't know. You can find it if you 13 Google that and that person's name comes up. 14 Q But you're not a coauthor on that paper? 15 A I was her mentor -- one of her mentors. 16 Q Okay. Also in paragraph six you list 17 out the materials that you have reviewed, and I want 18 to make sure that I'm -- I'm right. 19 Have you reviewed Mr. Maas's affidavit? 20 A I don't remember. 21 Q Do you remember reviewing the personal 22 profile by Mr. Maas? 23 A Was it called a personal profile, titled 24 a personal profile? 25 Q I'm --</p>

<p>53</p> <p>1 A I apologize. I should know the answer 2 to this. I don't know the answer to this. I -- I may 3 have -- I -- I should -- I -- paperwork that I read I 4 don't know the titles of the paperwork was such as you 5 represented here. I apologize. 6 Q Well, this is your report. I'm reading 7 from your report. 8 A Yes. 9 Q I haven't represented anything. 10 A Right. 11 Q I'm -- I'm using your report as my 12 guide. 13 A Yes. I understand. 14 Q So you don't recall if you read a 15 personal profile executed by Mr. Maas? 16 A I don't. 17 Q Do you recall if you reviewed the 18 interrogatory responses and document production 19 requests from Mr. Maas? 20 A I don't remember that. 21 Q Do you remember if you reviewed these 22 medical records that are listed? 23 A Yes, I do. 24 Q You reviewed the records themselves? 25 A That were provided to me. Yes.</p>	<p>55</p> <p>1 pre-incident patient records in his possession, would 2 he? 3 A He would have had his history. And I 4 think I remember the history, but that's all I 5 remember. 6 Q Okay. So when we're talking about 7 pre-incident patient medical records here, we're 8 really talking about the history that was in 9 Dr. Wray's -- 10 A Yes. 11 Q -- records? 12 A Yes. 13 Q What about statements by Mr. Maas's 14 coworkers? 15 Do you remember reviewing statements by 16 Mr. Maas's coworkers? 17 A I remember -- yes, I do -- there are -- 18 yes, I do remember statements. They were also soaked 19 in -- in the Corexit. 20 Q Do you remember the names of those 21 coworkers? 22 A Good grief, no. 23 Q Do you remember where you got those 24 statements from Mr. Maas's coworkers? 25 A It was in one of the -- one of these</p>
<p>54</p> <p>1 Q Okay. And do you have a specific 2 recollection of reviewing records from the Frist 3 Clinic? 4 A Frist Clinic? Dr. Wray's records. Yes. 5 Q What about THC Family Care? 6 A I think there was one. Yes, there is 7 one. Uh-huh. 8 Q Cookeville Regional Medical Group? 9 A Yes. I think so. Yes. 10 Q Okay. You also say you reviewed pre- 11 and post-incident patient medical records. 12 What -- what pre-incident patient 13 medical records did you review? 14 A Just the stuff -- information that was 15 provided by Dr. Wray before and after of his history 16 and physical. 17 Q Okay. So let me make sure I understand. 18 So Dr. Wray first saw Mr. Maas in what 19 year? 20 Do you recall? 21 A No. 22 Q Well, I'm going to represent to you that 23 it was after 2015. 24 A Okay. Yes. 25 Q And so Dr. Wray wouldn't have had any</p>	<p>56</p> <p>1 folders. 2 Q And the reason I'm asking is we've not 3 seen these statements -- 4 A Oh. 5 Q -- from Mr. Maas's coworkers. 6 So I -- I'm trying to figure out if this 7 is what you reviewed so that I can make sure that 8 I've -- 9 A No. I'm saying -- 10 Q -- reviewed them as well. 11 A Oh, yeah, I understand what you're 12 saying. I think it was in the Dr. Wray's reports that 13 he had comments from the -- his coworkers. 14 Q You don't have those statements? 15 A No, I don't. 16 Q And you didn't produce those statements 17 as part of your expert report; is that correct? 18 A No. 19 Q Number eight says, "personal research 20 data files." And I want to understand what that is. 21 What personal research data files did 22 you review? 23 A In number eight? 24 Q Yes. On -- on the top of page four it 25 says you reviewed "My personal research data files."</p>

<p>57</p> <p>1 A Oh, "utilized in the published research 2 results in articles." Yeah. I know my -- my data. 3 Yeah. 4 Q And do you recall what -- what those 5 personal research data files consisted of? 6 A Yes, of course. 7 Q And what were they? 8 A They're -- they're all the data done by 9 the student, how many times he did the same research 10 experiment and how many times he did it and the 11 results of each data as well as we did get the 12 material safety data sheet for Corexit. 13 Q Okay. So -- and, again, you didn't 14 provide any of that personal research data files with 15 your expert report; and so I'm trying to understand 16 what all that you reviewed in order to formulate your 17 opinions. And I understand you -- you reviewed about 18 ten studies. I think that's the right number. And 19 you reviewed material safety data sheet as part of 20 that ten. I'm trying to figure out what else you 21 reviewed that I don't have a copy of. 22 A Probably nothing else. 23 Q Okay. So I -- I don't have a copy of 24 the statements that Mr. Maas's coworkers provided, and 25 I don't have a copy of your pre -- your personal</p>	<p>59</p> <p>1 Q Paragraph seven you state, I off -- "I 2 offer no formal diagnosis of Mr. Maas, and limit my 3 observations to supporting the consistency of 4 Dr. Wray's diagnosis to my research." 5 Can you tell me what that sentence 6 means. 7 A Well, it means that I -- I accept 8 Dr. Wray's diagnosis and -- because I realize that it 9 is consistent with what we found in my research book. 10 Q So you're -- you're not offering a 11 formal diagnosis of Mr. Maas. 12 You're going to accept Dr. Wray's 13 diagnosis? 14 A Based on Dr. Wray's diagnosis. I didn't 15 -- I can't diagnose Mr. Maas without having examined 16 him or taken a history from him personally. 17 Q And -- and what does it mean "limit your 18 observations to supporting the consistency of 19 Dr. Wray's diagnosis to my research"? 20 A I guess what that means is that Dr. Wray 21 suggests that he has asthma, and he has -- and airways 22 disease secondary to exposure to Corexit. That's what 23 I believe that Dr. Wray's diagnosis is coming to. 24 And -- I mean, and I believe that some of the research 25 that I have done in the past suggests that that is a</p>
<p>58</p> <p>1 research data files. 2 A Okay. 3 Q Do you -- do you have those where you 4 can produce those to us, the personal research data 5 files? 6 A It's been so long I'd have to -- I don't 7 know where if -- I could find them. 8 Q Okay. Well, I would ask that you do 9 that and provide those to Mr. Burger for him to give 10 to us. 11 Is it possible that those personal 12 research data files consist of the ten studies that 13 you did produce to us? 14 A Not the -- well, personal data research 15 related to my -- my publication. That's what they 16 would -- there are thousands of pictures and thousand 17 -- just -- just a huge number of stuff. 18 Q Okay. Maybe I can ask it this way: 19 What -- in those personal research data files that you 20 reviewed, what part of that information did you use in 21 formulating your opinion in this case? 22 A The work done for my paper, for my 23 publication, and the -- an overview of some of these 24 papers here. I've read some of them. I know some of 25 them well.</p>	<p>60</p> <p>1 possibility. 2 Q In paragraph eight, that last sentence 3 in the paragraph -- 4 A Uh-huh. 5 Q And -- and by the way, paragraph eight 6 is -- these are the studies or the -- or the materials 7 that you reviewed in order to formulate your opinion; 8 is that correct? 9 A These are -- these are ones that I've 10 read in the past. Yes. 11 Q Okay. And you produced these reliance 12 materials to us; correct? 13 A Uh-huh. 14 Q And I believe there are ten. One, two, 15 three, four, five, six, seven, eight, nine, ten. 16 There are ten of these, A through J; 17 correct? 18 A Uh-huh. 19 Q You say -- there's the sentence right 20 before you list the publications, and I'll read it for 21 you, and then we can talk about it. It says, "Those 22 publications include, but are not limited to, the 23 following," and then you list out the ten. 24 And I guess I want to know what other 25 materials did you rely upon in formulating your</p>

<p style="text-align: right;">61</p> <p>1 opinion that did not make it on this list and were not 2 produced to us? 3 A Well, part of it is just my continued 4 research in the past with how toxins and such as 5 Corexit can affect respiratory epithelium. 6 Q From your HO1 study? 7 A The HO1 is part of the work that we did 8 on Corexit. We did lots of research. And it 9 continued in the -- my being a mentor to somebody who 10 was doing a -- who did her PhD on this work. 11 Q But none of that other research has 12 been -- 13 A Published. 14 Q -- published? 15 A Right. 16 Q In paragraph 9(a) you use the phrase 17 "minimal ingestion required for the Corexit/crude oil 18 combination to result in foreseeable, long-term 19 respiratory damage." 20 A This is probably inhalation. Yeah. 21 Q Well, that's what I wanted to ask you. 22 What is -- what do you mean by 23 ingestion? 24 A Ingestion is if you swallow something. 25 Inhalation is if you -- if you take it in through the</p>	<p style="text-align: right;">63</p> <p>1 to -- 2 Q Can you -- 3 A -- respiratory epithelium and found 4 damage to the respiratory epithelium. 5 Q Can you cite for me any study that 6 provides the dose level required to cause respiratory 7 damage in a human? 8 A We use human airway epithelium in vitro. 9 It would be number eight. I think we had doses in 10 that -- in that paper. 50 to 100 micrograms. 11 Q And you're talking about your HO1 study? 12 A Yes, sir. 13 Q And that's an in vitro study; correct? 14 A It's an in vitro study on human 15 respiratory epithelium. 16 Q So that's not epidemiology where we're 17 dealing with human beings that have ingested -- or 18 rather inhaled Corexit; is that correct? 19 A That is correct. It's not epidemiology. 20 Q It's cells? 21 A It's respiratory epithelial monolayers. 22 Yeah. It's as close as we can get to having a real 23 human being sit there inhaling Corexit. 24 Q What do you mean by the phrase 25 "aerosolized Corexit/crude oil combination"?</p>
<p style="text-align: right;">62</p> <p>1 respiratory route. 2 Q So this should read minimal inhalation 3 rather than minimal ingestion? 4 A Let me read the prior sentence. I think 5 in this case it should probably read inhalation. 6 Q It's your opinion that the inhalation of 7 the Corexit/crude oil examin -- combination caused 8 Mr. Maas's injury? 9 A I don't know if it caused Mr. Maas's 10 injury. I know that it can -- it can cause 11 respiratory damage. 12 Q So it's your opinion that it can cause 13 respiratory damage, but you don't know as we sit here 14 today if it caused Mr. Maas's respiratory damage? 15 A Right. 16 Q What do you believe the dose would have 17 to be in order for there to be damage? 18 A I think for the airway, it would be mini 19 -- the most smallest dose possible in micrograms, it 20 would cause damage to the respiratory epithelium. 21 Q And is that based on peer-reviewed 22 scientific literature that you've reviewed, or is that 23 based on your subjective belief? 24 A It's based on my subjective research 25 that I've done where we give micrograms of Corexit</p>	<p style="text-align: right;">64</p> <p>1 A Aerosolized -- can you repeat that 2 sentence again? 3 Q Right. What do you -- what do you mean 4 by the phrase -- I'm still in 9(a). 5 A Yeah. Yeah. 6 Q You have -- you use the phrase 7 "aerosolized Corexit/Crude oil combination," and I 8 want to know what -- what you mean by that. 9 A That -- that Corexit, you know, is -- is 10 itself a -- can cause damage. But if you add to it 11 crude petroleum oil, then that is -- can cause severe 12 irritation to the human respiratory epithelium. 13 Q I know I asked you a lot of questions 14 about your area of expertise. 15 Is it fair to say that you're not a 16 chemist? 17 A I'm not a chemist. 18 Q You're not -- 19 A I'm not -- I'm not a -- I don't have a 20 degree in chemistry. 21 Q You're not an expert in the field of 22 chemistry? 23 A No. 24 Q You're not going to offer any opinions 25 in the field of chemistry?</p>

<p>65</p> <p>1 A No.</p> <p>2 Q You used the phrase in (b) "generally</p> <p>3 accepted premise that breathing even a small amount of</p> <p>4 aerosolized vapor."</p> <p>5 Where it is generally accepted?</p> <p>6 What -- what -- what studies can you</p> <p>7 point me to that provide this general acceptance that</p> <p>8 you talk about here?</p> <p>9 A I think some of -- all these studies,</p> <p>10 some of these were done on -- on following up human</p> <p>11 subjects from -- who live around the Gulf or had</p> <p>12 worked in that area, and these people have evidence of</p> <p>13 respiratory disease post exposure.</p> <p>14 Q Any other studies besides the -- the ten</p> <p>15 that are listed above in your report?</p> <p>16 A I think the -- the biggest one would be</p> <p>17 the Environmental Health Perspectives journal, (i).</p> <p>18 Q Okay. We're going to -- we'll talk</p> <p>19 about -- we'll go back and talk about those studies.</p> <p>20 I just wanted to -- this generally accepted premise --</p> <p>21 A I think you will find that physicians</p> <p>22 and -- well, I think physicians will accept the fact</p> <p>23 that having a dispersant, an inhale -- that you inhale</p> <p>24 can cause damage to the lung.</p> <p>25 Q Well, you use the word "probably."</p>	<p>67</p> <p>1 of what was said by Mr. Maas to Dr. Wray or in his</p> <p>2 affidavit. And based on that is what I'm saying that</p> <p>3 if he was exposed to this stuff, then it's my view as</p> <p>4 a physician and a scientist who studied Corexit and</p> <p>5 its effect on the respiratory epithelium, I believe</p> <p>6 it's probable that he would get disease either</p> <p>7 immediate effects as well as long-term effects with</p> <p>8 exposure to Corexit. I can't say for Mr. Maas</p> <p>9 specifically but a person.</p> <p>10 Q And that's because you also don't know</p> <p>11 what levels Mr. Maas was exposed to or not exposed to;</p> <p>12 correct?</p> <p>13 A I don't. Yes.</p> <p>14 Q In that same paragraph I want -- there</p> <p>15 is a -- a portion here that is in -- in bold, and I'll</p> <p>16 read the whole sentence for completeness. It says,</p> <p>17 "more importantly, his assertions that, prior to the</p> <p>18 Deepwater Horizon spill, he had no history of</p> <p>19 respiratory ailments or complications at any time in</p> <p>20 his life."</p> <p>21 What is the significance of that</p> <p>22 statement?</p> <p>23 A Well, I think you're trying to figure</p> <p>24 out what caused his respiratory ailments and</p> <p>25 illnesses. He was a non-smoker. He had no prior</p>
<p>66</p> <p>1 Is "probably" a scientific term?</p> <p>2 A No.</p> <p>3 MR. BURGER: Object to the form.</p> <p>4 A But probable cause is -- I think we</p> <p>5 would accept that. Yeah.</p> <p>6 Q Why is it in quotation marks?</p> <p>7 A I don't know. Standard of probability</p> <p>8 -- probability and likely -- I'm not quite sure why</p> <p>9 it's in the quotation marks, but probable is -- is</p> <p>10 understandable word, I think, to me or to clinicians</p> <p>11 and to scientists.</p> <p>12 Q Okay. Paragraph 10; what do you mean</p> <p>13 when you say "with regard to the specific causation</p> <p>14 issues claimed by Mr. Maas, it is my opinion that his</p> <p>15 diagnosis is consistent with"?</p> <p>16 What do you mean "consistent with"?</p> <p>17 A That -- that Corexit can cause airways</p> <p>18 disease if you inhale it.</p> <p>19 Q You also use the word "preliminarily,"</p> <p>20 and it's underlined.</p> <p>21 And I'm -- I guess my first question is:</p> <p>22 What do you mean when you use the word</p> <p>23 "preliminarily?"</p> <p>24 A Because I cannot say what happened to</p> <p>25 Mr. Maas specifically. But I have to accept the fact</p>	<p>68</p> <p>1 exposures to anything that could cause damage to his</p> <p>2 lungs. So I think that's what it relates to.</p> <p>3 Q So if I'm understanding you correctly,</p> <p>4 it is important to you to be able to state that</p> <p>5 Mr. Maas did not have a history of respiratory</p> <p>6 ailments or complications in order to be able to say</p> <p>7 that his injury was caused by Deepwater Horizon spill</p> <p>8 cleanup work; is that correct?</p> <p>9 A True.</p> <p>10 Q If he had had respiratory ailments or a</p> <p>11 history of respiratory ailments or complications at</p> <p>12 any time in time in his life prior to the Deepwater</p> <p>13 Horizon spill, then you would say that it -- it was</p> <p>14 not likely or probable that the Deepwater Horizon</p> <p>15 spill caused his respiratory ailments or</p> <p>16 complications; is that correct?</p> <p>17 MR. BURGER: Object to the form.</p> <p>18 A No. That's not correct. Because I</p> <p>19 think that even -- suppose I take an asthmatic and</p> <p>20 expose the asthmatic to Corexit, then the asthmatic</p> <p>21 could get much worse. And then I could still say that</p> <p>22 the person has -- that his -- that the person's</p> <p>23 disease is related to exposure.</p> <p>24 Q Well, you wouldn't be able to say that</p> <p>25 his asthma was caused by that though, would you,</p>

<p>69</p> <p>1 because he already had asthma before the exposure?</p> <p>2 In your hypothetical; if somebody has</p> <p>3 asthma before they work in the cleanup work, then you</p> <p>4 can't say that the cleanup work caused that person to</p> <p>5 have as asthma.</p> <p>6 Is that --</p> <p>7 A Yeah.</p> <p>8 Q Is that not true?</p> <p>9 A But it could cause an exacerbation. It</p> <p>10 could cause a rapid decline in his symptoms.</p> <p>11 Q So it may cause him to have issues, but</p> <p>12 it wouldn't be the cause of the asthma. It may cause</p> <p>13 him to have an exacerbation but not the actual cause</p> <p>14 of it?</p> <p>15 A And the progression in human -- as a</p> <p>16 clinician, I -- I have a little concern with that</p> <p>17 statement saying that it's an absolute. It's not an</p> <p>18 absolute. It is --</p> <p>19 Q Well, I didn't say it; you said it --</p> <p>20 A Yeah.</p> <p>21 Q -- in your report.</p> <p>22 A Yeah. But this particular person says</p> <p>23 that he has no history. I'm going just by history.</p> <p>24 Q Right.</p> <p>25 A But in generically, I think -- I think</p>	<p>71</p> <p>1 Q And am I right in saying that that means</p> <p>2 that in order for you to say that a condition was</p> <p>3 caused by something, that condition needed to occur</p> <p>4 after the exposure rather than before the exposure?</p> <p>5 A Right. Though -- though if I may</p> <p>6 correct one little point here. Asthma is a disease</p> <p>7 that, you know, it can be genetic. And then you can</p> <p>8 get -- so we can't say that the asthma is caused by</p> <p>9 Corexit if a person -- but in this case, I think that</p> <p>10 this person was exposed to something that precipitated</p> <p>11 his disease.</p> <p>12 Q I think I understand this, and I just</p> <p>13 want to make sure. I'm trying not to belabor the</p> <p>14 issue.</p> <p>15 But that would cause you to re-examine</p> <p>16 the causation analysis or a causation opinion if there</p> <p>17 were prior respiratory issues before the exposure; is</p> <p>18 that correct?</p> <p>19 A I would like to see lung function tests</p> <p>20 before and after.</p> <p>21 Q All right. This -- back in paragraph</p> <p>22 10 -- I'm sorry. I lost my -- my place.</p> <p>23 A Sorry.</p> <p>24 Q I apologize.</p> <p>25 A That's all right.</p>
<p>70</p> <p>1 we can say that diseases may progress more rapidly</p> <p>2 after exposure. Diseases may show up after exposure.</p> <p>3 Q Well, let me ask you this: If -- if</p> <p>4 an -- hypothetically speaking, if an individual had</p> <p>5 asthma prior to any exposure; would you also then</p> <p>6 offer an opinion that it is at least likely or more</p> <p>7 probable than not that that person's asthma was caused</p> <p>8 by the exposure?</p> <p>9 A I would -- I would have a little more</p> <p>10 difficulty. Yes.</p> <p>11 Q It would -- it would alter your</p> <p>12 opinion --</p> <p>13 A Yeah.</p> <p>14 Q -- because the asthma pre-existed --</p> <p>15 A The --</p> <p>16 Q -- the --</p> <p>17 A Yes.</p> <p>18 Q -- exposure?</p> <p>19 A Yeah.</p> <p>20 Q And there's something in -- and you'll</p> <p>21 have to help me with this: "Temporal proximity."</p> <p>22 Does that phrase mean anything to you?</p> <p>23 A Uh-huh.</p> <p>24 Q "Temporal proximity"?</p> <p>25 A Uh-huh.</p>	<p>72</p> <p>1 Q There's a phrase here that -- that --</p> <p>2 that appears in the bolded part. And it says that</p> <p>3 "Pulmonologist" Charles -- "Dr. Charles Wray, who has</p> <p>4 treated Mr. Maas for a recent (early 2014) onset of a</p> <p>5 form of asthma that appears to be chemically induced."</p> <p>6 And I want to make sure I understand what you -- what</p> <p>7 we're saying here.</p> <p>8 Onset of a form of asthma. When you use</p> <p>9 the word "onset," does that mean that it -- it -- it</p> <p>10 just appeared?</p> <p>11 A That's what Dr. Wray says. I don't say</p> <p>12 that.</p> <p>13 Q Okay. You don't know because all you're</p> <p>14 doing is reviewing Dr. Wray's records; correct?</p> <p>15 A Absolutely. Yes.</p> <p>16 Q And is Dr. Wray the person who said that</p> <p>17 it was a form of asthma that appears to be chemically</p> <p>18 induced?</p> <p>19 That's not your characterization; that's</p> <p>20 Dr. Wray's characterization.</p> <p>21 A In -- yes. On Mr. Maas. Yes.</p> <p>22 Q Okay. You use a phrase in -- I'm sorry.</p> <p>23 In paragraph 11 on the top of page</p> <p>24 seven, you use a phrase: "I am familiar with the</p> <p>25 'toxic tort causation standard'."</p>

<p style="text-align: right;">73</p> <p>1 Tell me what you mean when you use the 2 phrase "toxic tort causation standard." 3 A I -- I believe it refers to a toxin that 4 -- that you say can -- may probably cause it, is the 5 probable cause of a disease or a problem. And that -- 6 that is the limit of what you want anyone can say it 7 is. It is sort of reasonable to conclude after that 8 that sort of probable cause was Mr. -- this particular 9 person was harmed as a result of this exposure to 10 aerosolized Corexit. 11 Q So that -- that sounds like a legal -- 12 A Yeah. It's a legal phrase. 13 Q -- phrase. 14 A Yeah. I believe it's a legal phrase. 15 Q Okay. And I know you're not a chemist, 16 but do you have an opinion on the fate and transport 17 of Corexit that was sprayed on the surface of the 18 ocean or even at the site of the wellhead, like what 19 happens to that Corexit once it's sprayed? 20 A Well, it goes down to the bottom of the 21 ocean. Is -- it's broken into mi -- micelles. 22 Corexit breaks the oil into micelles, and the Corexit 23 goes down with the combination to the bottom of the 24 ocean or is soluble and washed off. And the oil 25 itself is -- goes down to the bottom.</p>	<p style="text-align: right;">75</p> <p>1 like thousand plus times diluted. 2 Q Okay. Well, I guess what I'm asking is: 3 The delusion that you used in your HO1 paper -- 4 A Yeah. 5 Q -- do you know if that was the same 6 delusion that would have occurred when Corexit was 7 sprayed on sea water in the Gulf? 8 MR. BURGER: Excuse me. Object to the 9 form. 10 A I -- I -- I can't answer that. 11 Q Okay. 12 A I don't know the answer to that. 13 Q In (b) -- I'm sorry -- 12 -- paragraph 14 12(b) -- 15 A Uh-huh. 16 Q -- you're talking about the -- the 17 respiratory epithelium; correct? 18 A True. 19 Q Okay. At the end of that you make a 20 statement: "particularly with the exacerbation of 21 pre-existing respiratory conditions such as asthma." 22 A So what was the question as to that? 23 Q Well, I'm going -- I'm going to ask a 24 question. 25 A Okay.</p>
<p style="text-align: right;">74</p> <p>1 Q And to make sure I -- I understand 2 correctly: When the Corexit hits the sea water, it 3 changes its chemical composition; is that -- is that 4 fair to say? 5 A I can't say that. I don't know that. 6 Q Okay. It at least becomes diluted by 7 the sea water. 8 Is that fair to say? 9 A Probably, yes. 10 Q And when you're talking about the 11 Corexit that you used in your HO1 paper, that was a 12 nondiluted Corexit; is that correct? 13 A No. It was diluted. 14 Q It was diluted? 15 A Yes. 16 Q With what? 17 A With water; saline water, PBS. 18 Q Okay. And -- and so was it diluted in 19 the same concentration as what the Corexit that was 20 sprayed in the Gulf was diluted to? 21 A No. It -- Corexit was sprayed fully 22 concentrated the way it comes in the -- in the tins. 23 And we got one of those tins, and that's what we used. 24 And we used -- we diluted it to where it was only in 25 50 micro -- micrograms per ML. I mean, that is just</p>	<p style="text-align: right;">76</p> <p>1 Q You're not suggesting here that Mr. Maas 2 had a preexisting respiratory condition, are you? 3 A I don't know. 4 Q You don't -- you don't know one way or 5 the other? 6 A I don't know one way or the other. 7 According to Dr. Wray, he did not. 8 Q Okay. In -- in paragraph 12(c) you're 9 talking about HO1, and that's -- that's the subject of 10 your -- of your paper. And I want to make sure I 11 understand. 12 This is an enzyme; correct? 13 A A naturally-occurring enzyme. Yes. 14 Q Naturally-occurring enzyme. 15 And is it correct to say that this 16 enzyme provides a respiratory anti-inflammation 17 protection? 18 A Yes. So it's an anti -- like an 19 antioxidant. 20 Q Okay. And can you tell me how that HO1 21 enzyme plays into an individual who may be exposed to 22 Corexit? 23 What -- what happens with that enzyme? 24 A Well, what happens to Heme oxygenase? 25 It's upregulated when they -- when they are exposed to</p>

<p>77</p> <p>1 Corexit, cells are exposed to Corexit, human cells; 2 which is a good thing because it's a protective 3 enzyme. It will protect the -- the -- but -- but it's 4 dampened by the amount of oxidants that are released 5 by Corexit like ox -- a protein called NADPH oxidase 4 6 is activated in the cells, and that causes a lot of 7 reactive oxygen species to be released by exposure to 8 Corexit. And HO1 tries to dampen it, tries to dampen 9 the amount of oxygen radicals that are released 10 because oxygen radicals can then injure the cell 11 itself. 12 Q So if am a person who gets exposed to a 13 substance and that upregul -- or I -- this enzyme gets 14 produced, that actually is providing a protection for 15 me? 16 It's helping me; is that correct? 17 A HO1 attempts to -- yes. HO1 is a 18 protective enzyme. Yeah. 19 Q Okay. Paragraph 13 is entitled "Our 20 Research Methodology," and there's a paragraph about 21 human bronchial epithelial cell lines. 22 Is this research that you're referencing 23 in this paragraph, that's talking about the HO1 24 paper -- 25 A Yeah.</p>	<p>79</p> <p>1 Dr. Wray. 2 Q Okay. So other than what Dr. Wray told 3 you, you don't know if he's been a smoker or not? 4 A I don't. 5 Q You don't know if he has or has not had 6 respiratory issues prior to his work at Deepwater? 7 A According to Dr. Wray, no. 8 Q Okay. If Dr. Wray was incorrect in 9 taking the occupational history or the medical history 10 of Mr. Maas, then your opinions would be altered by 11 Dr. Wray's mistakes in his taking of the histories; is 12 that correct? 13 MR. BURGER: Object to form. 14 A I -- I take Dr. Wray's word as it's 15 presented here. 16 Q I -- 17 A But if it is not correct, then it's not 18 correct. 19 Q Okay. And I -- I guess I'm trying to 20 clear up -- a lot of what is in this report is based 21 on what Dr. Wray says; is that correct? 22 A No. My intention is to -- to provide to 23 you evidence that Corexit could hurt respiratory 24 epithelium. That -- that's what the primary goal of 25 this --</p>
<p>78</p> <p>1 Q -- that you published? 2 A Uh-huh. True. 3 Q Okay. In paragraph 15, 15(a) is a 4 consideration -- is entitled "A consideration of 5 differential diagnoses." 6 What -- what do you mean when you use 7 the phrase "differential diagnoses"? 8 A A differential diagnosis are the 9 different causes of a particular problem. 10 Q And I think I understood you correctly 11 to say you're -- you're really not able to do that for 12 Mr. Maas because you've never examined Mr. Maas; is 13 that correct? 14 A True. 15 MR. BURGER: Object to the form. 16 A True. 17 Q So are you -- 18 A Building a differential or my -- is 19 based on what I was told about his history. 20 Q Okay. So as we sit here today, are you 21 going to provide an opinion that you did a 22 differential diagnosis or diagnoses on Mr. Maas? 23 A I didn't examine him, nor did I take his 24 history. I'm going by the information provided to me 25 in his affidavits and in the data provided by</p>	<p>80</p> <p>1 Q Okay. And -- 2 A -- report is. 3 Q And you're not doing that generally but 4 not -- 5 A On -- 6 Q -- specifically to Mr. Maas? 7 A I -- I cannot -- well, if all the 8 information that was provided to me is correct; then, 9 yes, to -- applicable to Mr. Maas. 10 Q What do you -- what do you mean by the 11 phrase "delayed onset of symptoms"? That -- that's on 12 page 11. 13 It's -- I guess it's subsection (b). 14 A All right. So -- 15 Q What do you mean by delayed onset of 16 symptoms? 17 A Delayed onset of symptoms is a very 18 recognized clinical phrase. It is -- it relates to 19 the doddery anatomical and physiological changes 20 occurring in the lungs. They may not be -- the 21 patient may not be symptomatic as of yet. And the 22 patient's symptoms come when you've lost like about 23 less than 50 percent of your lung function. So you 24 could be losing lung function as a smoker, for 25 example, until you reach the point where you become</p>

<p style="text-align: right;">81</p> <p>1 short of breath. And you don't know it for the first</p> <p>2 half of the time, and you're doing just fine, and</p> <p>3 you're continuing to smoke.</p> <p>4 Q Would you agree with me that as symptoms</p> <p>5 are delayed from a specific exposure, it becomes more</p> <p>6 difficult to state with any specificity that that</p> <p>7 exposure caused those symptoms?</p> <p>8 A Yes. Temporal distance between cause</p> <p>9 and effect can be a problem. But there are diseases,</p> <p>10 like I said, that progress over time where there are</p> <p>11 -- where the lung changes its structure and its</p> <p>12 physiology; and you become symptomatic much later.</p> <p>13 Q And you do not know if that's what</p> <p>14 happened in this case with Mr. Maas specifically;</p> <p>15 correct?</p> <p>16 A From Dr. Wray's story, that's what</p> <p>17 happened in this case in part. I believe he had some</p> <p>18 acute symptoms as well, and then he was fine for a</p> <p>19 little bit but then got really bad later on.</p> <p>20 Q Did you see anything in your review of</p> <p>21 the medical records that led you to believe that there</p> <p>22 could have been any other causes for Mr. Maas's</p> <p>23 asthma?</p> <p>24 A No.</p> <p>25 Q Did you see anything in the medical</p>	<p style="text-align: right;">83</p> <p>1 short break rather. I want to sort of switch gears</p> <p>2 and ask you some questions about the articles that you</p> <p>3 cited in your expert report; or -- or the literature,</p> <p>4 rather; those ten studies, A through J. And I -- I</p> <p>5 cannot remember what paragraph that is.</p> <p>6 A I'll find it. Eight.</p> <p>7 Q Okay. But -- but -- but before I do</p> <p>8 that, I -- I kind of want to go back and do some</p> <p>9 foundational work.</p> <p>10 I guess, first, can you -- can you talk</p> <p>11 me through the methodology that you used locate those</p> <p>12 ten studies that you used to form your opinion?</p> <p>13 A These are some of the studies that I've</p> <p>14 read. I've read other studies, but they were -- they</p> <p>15 seemed to be relevant -- the most relevant to the</p> <p>16 case.</p> <p>17 Q Can -- can you tell me what criteria you</p> <p>18 used to -- to locate them or what -- what about those</p> <p>19 made you rely upon those versus other studies that you</p> <p>20 may have reviewed?</p> <p>21 A Because they're related to the lung,</p> <p>22 they're related to toxicity of dispersants, and</p> <p>23 because of -- of -- this was a question related to</p> <p>24 research on toxicity of Corexit.</p> <p>25 Q Did -- did you employ any certain</p>
<p style="text-align: right;">82</p> <p>1 records about Mr. Maas using marijuana?</p> <p>2 A I didn't see that.</p> <p>3 Q If Mr. Maas smoked marijuana, would that</p> <p>4 be a possible alternative cause for development of</p> <p>5 asthma?</p> <p>6 A Marijuana exposure is associated with</p> <p>7 some abnormalities -- possible abnormalities in the</p> <p>8 lungs in the airways. But I think that the degree of</p> <p>9 disease that -- as represented by Dr. Wray that he has</p> <p>10 would not be caused by marijuana exposure.</p> <p>11 Q Okay. Dr. Anthony, let's take a short</p> <p>12 break. I'm going to kind of -- I think I'm done with</p> <p>13 the report for right now. This seems to be a good</p> <p>14 time for us maybe to take a break and change gears.</p> <p>15 Is that okay with you?</p> <p>16 A Of course.</p> <p>17 MR. MCLEOD: 15 minutes, Ken? Is that</p> <p>18 good?</p> <p>19 MR. BURGER: That's fine. Thank you.</p> <p>20 THE VIDEOGRAPHER: We're off the record.</p> <p>21 The time is 2:37 p.m.</p> <p>22 (Short recess.)</p> <p>23 THE VIDEOGRAPHER: We are back on the</p> <p>24 record. The time is 2:53 p.m.</p> <p>25 Q Dr. Anthony, back after a small break --</p>	<p style="text-align: right;">84</p> <p>1 research techniques to locate those ten studies?</p> <p>2 A Well, PubMed is -- find them all on</p> <p>3 PubMed.</p> <p>4 Q Okay. Did you use specific search terms</p> <p>5 to -- to pull those out of PubMed?</p> <p>6 A Gosh, I don't remember.</p> <p>7 Q Okay. It -- did you find those all on</p> <p>8 PubMed, or did you get those from any other sources,</p> <p>9 or do you recall?</p> <p>10 A Well, I've seen them all on PubMed.</p> <p>11 Q Okay. Did you -- did you see them on</p> <p>12 PubMed specifically related to your expert work in</p> <p>13 this case, or did you see them at some point prior to</p> <p>14 you being retained as an expert in this case?</p> <p>15 A Prior to being retained.</p> <p>16 Q I know that you said you're not an</p> <p>17 epidemiologist, but -- but I think you said you, you</p> <p>18 know, do know what epidemiology is.</p> <p>19 Let me ask you this: Are you familiar</p> <p>20 with the two main types of epidemiologic studies?</p> <p>21 A I don't know what you're referring to.</p> <p>22 Q Okay. Well, have you --</p> <p>23 A You'll have to be more specific.</p> <p>24 Q Well, have you heard of -- of</p> <p>25 epidemiology that's described as descriptive studies?</p>

<p>85</p> <p>1 A Uh-huh.</p> <p>2 Q Do you know what I mean when I say</p> <p>3 descriptive studies in epidemiology?</p> <p>4 A Yes.</p> <p>5 Q And -- and what is your definition of a</p> <p>6 descriptive study in epidemiology?</p> <p>7 A For example, it would be like the</p> <p>8 prevalence of a particular disease or prevalence of</p> <p>9 people with deviated nasal septum or whatever in a</p> <p>10 population, descriptive.</p> <p>11 Q Do you agree that descriptive studies</p> <p>12 are unable to establish causal associations between an</p> <p>13 exposure and disease?</p> <p>14 A I think that would be of -- yes and no.</p> <p>15 Q Okay. Tell me why yes first.</p> <p>16 Why -- why can't they be used to show a</p> <p>17 causal connection or a causal association?</p> <p>18 A So I think it would be difficult to do</p> <p>19 that because you -- because there's so much else going</p> <p>20 on at the same time. So you can't say that this one</p> <p>21 particular thing did something to cause a population</p> <p>22 to have a particular problem.</p> <p>23 Q Okay. And why the no part of that</p> <p>24 answer?</p> <p>25 Why do you think they could be used to</p>	<p>87</p> <p>1 Q Do you --</p> <p>2 A -- to make significant correlations.</p> <p>3 Q Do you agree with me that</p> <p>4 cross-sectional studies are a form of descriptive</p> <p>5 studies?</p> <p>6 A Yes.</p> <p>7 Q And do you agree with me that</p> <p>8 cross-sectional studies can't be used to establish</p> <p>9 cause-and-effect relationships?</p> <p>10 A Again, I have some of the same caveats</p> <p>11 that I talked about previously.</p> <p>12 Q Do you agree with me that descriptive</p> <p>13 studies have problems due to confounding factors that</p> <p>14 exist in the studies themselves?</p> <p>15 A Yes. Absolutely.</p> <p>16 Q And they can also suffer from bias that</p> <p>17 exists that further reduces their reliability.</p> <p>18 Do you agree with that statement?</p> <p>19 A True.</p> <p>20 Q Are you familiar with a type of study in</p> <p>21 epidemiology referred to as analytical study?</p> <p>22 A If by that you mean whether this</p> <p>23 particular exposure causes something in an individual</p> <p>24 or in a population, yes.</p> <p>25 Q And that analytical studies are the type</p>
<p>86</p> <p>1 show causation?</p> <p>2 A They could be used because -- because</p> <p>3 there are some very specific problems that are noticed</p> <p>4 with the particular cause. And then if you find that</p> <p>5 in a population, then that makes you very suspicious</p> <p>6 that they're related.</p> <p>7 Q Yeah. Do you agree that descriptive</p> <p>8 studies can't determine cause and effect because the</p> <p>9 exposure and the outcome are ascertained at the same</p> <p>10 time?</p> <p>11 A No. I think -- I think you can -- you</p> <p>12 can very much connect. I'll take for example the</p> <p>13 Mobile explosion or whatever that happened in India.</p> <p>14 There was a cause, and it was an effect, and the whole</p> <p>15 population was affected. So you knew how many</p> <p>16 millions of people were affected and how many</p> <p>17 thousands died.</p> <p>18 Q Okay. What about when you're dealing</p> <p>19 with an exposure to a toxic substance over a period of</p> <p>20 time?</p> <p>21 Can a descriptive study show a</p> <p>22 cause-and-effect relationship?</p> <p>23 A It would -- it would get more difficult.</p> <p>24 It would get more messy. You would have to have a lot</p> <p>25 larger numbers --</p>	<p>88</p> <p>1 of epidemiology that you used to establish a general</p> <p>2 causation analysis?</p> <p>3 Do you agree with that statement?</p> <p>4 A No.</p> <p>5 Q You don't believe that analytical</p> <p>6 studies are used to establish cause and effect?</p> <p>7 A They can be used to do cause and effect.</p> <p>8 Yes, can.</p> <p>9 Q Would you agree with me that in order to</p> <p>10 establish a cause-and-effect relationship between an</p> <p>11 exposure and a disease that you would need to know how</p> <p>12 frequently the disease occurs in the presence of the</p> <p>13 exposure?</p> <p>14 A How frequently the disease occurs?</p> <p>15 Q Yeah. The incidence rate?</p> <p>16 A Yeah.</p> <p>17 Q Do you have any understanding as to the</p> <p>18 term "relative risk" as it applies to epidemiology?</p> <p>19 A Yes.</p> <p>20 Q And do you know the significance of a</p> <p>21 confidence interval in evaluating epidemiological</p> <p>22 studies?</p> <p>23 A Yes.</p> <p>24 Q And do you have an opinion in terms of</p> <p>25 epidemiology what the relative risk has to be in order</p>

<p>89</p> <p>1 to establish that there is a cause-and-effect 2 relationship between an exposure and a disease? 3 A You mean numerically? 4 Q Huh? 5 A I sure don't. I don't. 6 Q Okay. If you have a relative risk of 7 2.0 with the proper confidence interval, do you know 8 what the next step would be in order to establish the 9 statistical association between exposure and a disease 10 for a causal analysis? 11 A I think it would be -- no, I don't. I 12 shouldn't say I know it. No, I don't. 13 Q Are you familiar with the Bradford Hill 14 criteria? 15 A No. 16 Q Do -- strike that. 17 Have you ever heard of the term "odds 18 ratio" in the context of epidemiology? 19 A Yes. 20 Q And what does odds ratio mean in 21 epidemiology? 22 A Kind of just exactly what it says, what 23 is -- that what are the odds of this happening or this 24 is related to that. Except, right, that you're asking 25 me questions for epidemiology but generically related</p>	<p>91</p> <p>1 A I don't know what that is. 2 Q Okay. I want to take a look at some of 3 the specific studies that you rely upon in your 4 report. And I think maybe the best way to do it is 5 for me to just mark them individually as they come up. 6 So let's mark this as Exhibit 3. This is your own HO1 7 study. 8 (Exhibit Number 3 was 9 marked for identification.) 10 Q I'm going to hand that to you for you to 11 look at, and I want to ask you some questions about 12 that study. 13 You are listed as a coauthor of that 14 study; correct? 15 A Yes. 16 Q There are a lot of other authors on this 17 study as well. 18 Would you agree with that? 19 A Yes. 20 Q Did each of y'all have a specific area 21 that you were responsible for in authoring this paper, 22 or how does that work? 23 A Well, the -- the primary author does a 24 lot of the primary work and writes the paper. The 25 senior author, that's -- that would be me, oversees</p>
<p>90</p> <p>1 to populations, not -- not -- epidemiology doesn't 2 work ancestrally when you're related to talking about 3 an individual. 4 Q Well, that goes back to our difference 5 between general causation and specific causation; 6 correct? 7 A Correct. 8 Q And in order to establish general 9 causation, you use epidemiology; correct? 10 A Yes. 11 Q And in order to establish specific 12 causation, first you have to have general causation. 13 Do you agree with that statement? 14 A Usually, yes. 15 Q Well, in order for us to know that an 16 individual got lung cancer because they smoked 17 cigarettes, we need to know that smoking cigarettes 18 can cause lung cancer; correct? 19 A Yes. 20 Q Okay. Are you familiar with The 21 Reference Manual on Scientific Evidence that's 22 published by the Federal Judicial Center? 23 A No. 24 Q Have you ever read that reference 25 manual?</p>	<p>92</p> <p>1 the whole project. And the people individually 2 written over here had different areas of expertise or 3 contributed to it in different ways. 4 Q So you were the senior author on this 5 study? 6 A Yes. 7 Q Okay. You would agree with me that this 8 is not a human epidemiological study; correct? 9 A Absolutely. Yes. 10 Q You would -- you would agree with me 11 it's not? 12 A Yes. Yes. 13 Q Looking on page one at the bottom of the 14 first paragraph under introduction it reads, "Despite 15 the large volume of CE used in remediation, the 16 effects on the respiratory epithelium of human and 17 gills of aquatic animals such as fish and crabs 18 exposed to this dispersant are largely unknown." 19 And CE in that instance, we're talking 20 about Corexit; correct? 21 A Yes. 22 Q And would you agree with me that that 23 statement is true: The effects of the respiratory -- 24 on the respiratory epithelium of Corexit in humans is 25 unknown?</p>

<p>93</p> <p>1 A Until we wrote this paper, yes.</p> <p>2 Q And this study used BEAS-2B human</p> <p>3 epithelial cells?</p> <p>4 A Uh-huh.</p> <p>5 Q And you subjected them to various levels</p> <p>6 of 9500A Corexit; correct?</p> <p>7 A Yes.</p> <p>8 Q And I think I asked you this before, but</p> <p>9 I want to make -- make sure that I do it in this</p> <p>10 context.</p> <p>11 Do you have any way of knowing if the</p> <p>12 levels of Corexit to which these epithelial cells in</p> <p>13 the study were exposed to has any correlation to the</p> <p>14 levels of Corexit that were found in the Gulf of</p> <p>15 Mexico?</p> <p>16 A I think that the levels of Corexit that</p> <p>17 were found in the Gulf of Mexico would be very</p> <p>18 variable. So I don't know what they were there</p> <p>19 because they were -- like when it was sprayed up in</p> <p>20 the air, it was a lot and very concentrated. When it</p> <p>21 got into the water, it probably got diluted. But we</p> <p>22 used a very dilute amount of Corexit.</p> <p>23 Q And I appreciate that.</p> <p>24 I guess then that -- your answer would</p> <p>25 be, no, you don't know the different levels?</p>	<p>95</p> <p>1 A That asthma that is defined by changes</p> <p>2 in permeability of the airway epithelium, which is</p> <p>3 what happens in asthma, is -- this study demonstrates</p> <p>4 that.</p> <p>5 Q Is the word "asthma" in this study ever?</p> <p>6 A Oh, I don't know. I could look it over</p> <p>7 to see. But I don't know if we did call it asthma per</p> <p>8 se. I mean, I call -- you know, I think we're getting</p> <p>9 -- I don't -- I mean, maybe you're asking me that</p> <p>10 question on purpose. But if you think about it in the</p> <p>11 broader term of airways disease; yes, it can cause</p> <p>12 airways disease. And asthma is a form of airways</p> <p>13 disease. And asthma is characterized by changes in</p> <p>14 permeability of the respiratory epithelium.</p> <p>15 Q I'm -- I'm not trying to fence with you.</p> <p>16 I really want to know the answer to the</p> <p>17 question.</p> <p>18 A Okay.</p> <p>19 Q And it's a simple question.</p> <p>20 Does this study purport to demonstrate</p> <p>21 that asthma can be caused in a human being by exposure</p> <p>22 to Corexit?</p> <p>23 A This study attempted to show that the</p> <p>24 pathological changes that are seen in asthma can be</p> <p>25 caused by exposure to Corexit.</p>
<p>94</p> <p>1 A I do not know the different levels.</p> <p>2 Q Okay. And would it also be fair to say</p> <p>3 that you don't know if the levels of Corexit in this</p> <p>4 study correlate to any of the levels of Corexit that</p> <p>5 Mr. Maas may have been exposed to?</p> <p>6 Is that correct?</p> <p>7 A Correct.</p> <p>8 Q Would you agree with me that this study</p> <p>9 can't be used to demonstrate any sort of causal nexus</p> <p>10 between exposure to Corexit and asthma in a human</p> <p>11 being?</p> <p>12 MR. BURGER: Object to form.</p> <p>13 A Can you repeat that statement.</p> <p>14 Q Sure. Would you -- Is it fair to say</p> <p>15 that this study can't be used to demonstrate a causal</p> <p>16 nexus between exposure to Corexit and the development</p> <p>17 of asthma in a human individual?</p> <p>18 A I think yes and no because -- no because</p> <p>19 I'm not studying a human in this study. Yes because</p> <p>20 the short -- we demonstrated the changes in</p> <p>21 permeability in the respiratory epithelium, and that's</p> <p>22 what happens in asthma.</p> <p>23 Q So -- but you would agree with me that</p> <p>24 nowhere in this study does it talk about that asthma</p> <p>25 can be caused by Corex -- by exposure to Corexit?</p>	<p>96</p> <p>1 Q In epithelial cells; correct?</p> <p>2 A Yes. In the -- in the airway of the epi</p> <p>3 -- of -- yeah. Which are lined by epithelial cells.</p> <p>4 Q But not asthma; just changes in</p> <p>5 epithelial cells?</p> <p>6 MR. BURGER: Object to the form.</p> <p>7 A Yeah.</p> <p>8 Q I mean, I've read this paper --</p> <p>9 A Yeah.</p> <p>10 Q -- and I can't -- I can't find in the</p> <p>11 conclusion that talks about -- anything about asthma.</p> <p>12 And I'm just asking you if there's something in this</p> <p>13 paper about asthma that you can point me to that will</p> <p>14 demonstrate a causal nexus between exposure to Corexit</p> <p>15 and asthma in a human being, and I can't find it.</p> <p>16 And so does it exist, or does it not</p> <p>17 exist in this paper?</p> <p>18 A Well, yeah, there is a -- here. Okay.</p> <p>19 Here we go. If you look at this page 11 of 16, we say</p> <p>20 respiratory illnesses such as asthma or chronic</p> <p>21 obstructive pulmonary disease, the consequences of CE</p> <p>22 exposure on bronchial epithelial cells may not</p> <p>23 directly lead to inflammation but may also exacerbate</p> <p>24 the symptoms of preexisting respiratory illnesses such</p> <p>25 as asthma and COPD.</p>

<p style="text-align: right;">97</p> <p>1 Q So it doesn't cause asthma, but it may</p> <p>2 exacerbate asthma?</p> <p>3 Is that what that reads?</p> <p>4 A This says that it is possible that it</p> <p>5 may exacerbate asthma. But --</p> <p>6 Q It may, or it may not?</p> <p>7 A It may, or it may not. Yes.</p> <p>8 Q Okay.</p> <p>9 A But it's possible that it would.</p> <p>10 Q Are you aware -- and I guess the answer</p> <p>11 is no because you haven't read the reference manual --</p> <p>12 but what the reference manual says about in vitro</p> <p>13 studies and correlation to causation in a human being?</p> <p>14 You haven't read the reference manual --</p> <p>15 A No, I haven't.</p> <p>16 Q -- you don't know what it says?</p> <p>17 A No. But I would imagine that it gets</p> <p>18 more difficult.</p> <p>19 Q Let's look at the next study, which I</p> <p>20 somehow have misplaced. That's not supposed to</p> <p>21 happen.</p> <p>22 Let's mark this as Exhibit 4 I believe.</p> <p>23 (Exhibit Number 4 was</p> <p>24 marked for identification.)</p> <p>25 Q This is the second -- or one of the</p>	<p style="text-align: right;">99</p> <p>1 A -- "is of low acute toxicity to most</p> <p>2 species, although embryo and larval stages are more</p> <p>3 sensitive."</p> <p>4 Q Do you agree with that statement that</p> <p>5 9527 is of low acute toxicity to most species?</p> <p>6 A I will assume -- in this paper, yes. In</p> <p>7 this data for ASA, yeah.</p> <p>8 Q If you turn to the next page, page 1226.</p> <p>9 A (Witness complies.)</p> <p>10 Q And it's in the, I guess, third</p> <p>11 paragraph; the one that starts by the word</p> <p>12 "Extrapolating."</p> <p>13 A Uh-huh.</p> <p>14 Q A couple of sentence down there's a</p> <p>15 sentence that begins "Under current dispersant-use</p> <p>16 guidelines"?</p> <p>17 A Uh-huh.</p> <p>18 Q And it reads "Under current</p> <p>19 dispersant-use guidelines that exist in the United</p> <p>20 Kingdom and elsewhere, dispersant concentrations are</p> <p>21 unlikely to be sufficiently high to cause harm to</p> <p>22 aquatic organisms within open waters."</p> <p>23 Do you agree with that statement?</p> <p>24 A No.</p> <p>25 Q You do not agree with that statement?</p>
<p style="text-align: right;">98</p> <p>1 other studies, the ten. It's entitled "Comparative</p> <p>2 Toxicity of Two Oil Dispersants, Superdispersant-25</p> <p>3 and Corexit 9527."</p> <p>4 Now, that's not the same type of Corexit</p> <p>5 that you used in your study; correct?</p> <p>6 A True.</p> <p>7 Q But it is a type of Corexit that at some</p> <p>8 point they used in Deepwater Horizon cleanup.</p> <p>9 Do you agree with that?</p> <p>10 A Yes.</p> <p>11 Q Would you agree with me that this study</p> <p>12 is not an epidemiological study on human health</p> <p>13 effects and causation of adverse health effects in</p> <p>14 humans?</p> <p>15 A True.</p> <p>16 Q If you turn to page 1225.</p> <p>17 A (Witness complies.)</p> <p>18 Q I guess I'm in the -- the right column</p> <p>19 down about, I guess, a fourth of the way that's -- the</p> <p>20 sentence that starts after the 32 in brackets.</p> <p>21 Do you -- do you see that? It starts</p> <p>22 "In general"?</p> <p>23 A Yes. "the reviewed data show that</p> <p>24 Corexit 9527" -- that one?</p> <p>25 Q Yes.</p>	<p style="text-align: right;">100</p> <p>1 A No. Because I think that this statement</p> <p>2 is -- this is in the discussion of the paper. So a</p> <p>3 discussion of a paper usually goes -- gives the pros</p> <p>4 and the cons. And it's not really am I supposed to</p> <p>5 agree with this statement; it's just making a point.</p> <p>6 Q Well, would you agree with me that this</p> <p>7 study doesn't address the issue of asthma?</p> <p>8 A No, it does not.</p> <p>9 Q And it doesn't attempt to suggest that</p> <p>10 Corexit can cause asthma?</p> <p>11 A It's a study in ocean creatures.</p> <p>12 Q Doesn't suggest that Corexit can cause</p> <p>13 any health effects in humans; correct?</p> <p>14 A It doesn't talk about humans at all.</p> <p>15 Q And you wouldn't use this study as the</p> <p>16 basis of a general causation opinion that Corexit can</p> <p>17 cause asthma in a human being; correct?</p> <p>18 A True.</p> <p>19 MR. MCLEOD: I would like to blame</p> <p>20 somebody else for these being out of order, but I did</p> <p>21 it myself. So it has --</p> <p>22 MR. JARVIS: I didn't do it to you.</p> <p>23 MR. MCLEOD: -- to be my fault.</p> <p>24 Q I apologize, Dr. Anthony.</p> <p>25 A It's all right.</p>

<p style="text-align: right;">101</p> <p>1 (Discussion off the record.)</p> <p>2 Q Let's mark this as our next exhibit.</p> <p>3 (Exhibit Number 5 was</p> <p>4 marked for identification.)</p> <p>5 Q Dr. Anthony, I've handed you another one</p> <p>6 of the studies. This is entitled "Evaluation of</p> <p>7 Pulmonary and Systemic Toxicity of Oil Dispersant</p> <p>8 (Corexit EC9500A) Following Acute Repeated Inhalation</p> <p>9 Exposure." And this is one of the studies that you</p> <p>10 cited in your expert report.</p> <p>11 On page one the first sentence under</p> <p>12 results, it reads "No significant alterations in</p> <p>13 airway reactivity were observed at one or seven days</p> <p>14 after exposure either in baseline values or following</p> <p>15 methacholine inhalation challenge."</p> <p>16 A Uh-huh.</p> <p>17 Q Does that sentence mean that after</p> <p>18 exposure there was no effect on the airway reactivity,</p> <p>19 no alterations, no significant alterations?</p> <p>20 A At one to seven days; yes, it does.</p> <p>21 Q Okay. And if you turn to the -- to the</p> <p>22 next page under Conclusions, it says, "In summary</p> <p>23 acute repeated exposure to COREXIT EC9500A did not</p> <p>24 alter pulmonary function, lung injury/inflammation,</p> <p>25 systemic immune responses, or vascular tone, but did</p>	<p style="text-align: right;">103</p> <p>1 A Right.</p> <p>2 Q And you wouldn't use this study to form</p> <p>3 the basis of an opinion that Corexit can cause asthma</p> <p>4 in human beings.</p> <p>5 Is that also correct?</p> <p>6 A I would not. Yeah.</p> <p>7 MR. MCLEOD: Lets mark this as the next</p> <p>8 exhibit.</p> <p>9 (Exhibit Number 6 was</p> <p>10 marked for identification.)</p> <p>11 Q Doctor, this is a -- I believe an</p> <p>12 article that appeared in Science Daily. And if I'm</p> <p>13 not mistaken, it came -- the date on this is April</p> <p>14 2nd, 2015. It came from UAB. And you are actually</p> <p>15 quoted in this article.</p> <p>16 Do you -- do you remember this article</p> <p>17 at all?</p> <p>18 A Maybe, yes.</p> <p>19 Q And if you look if you want to see your</p> <p>20 quote, or one of your quotes --</p> <p>21 A Yeah.</p> <p>22 Q -- it's in about the fourth paragraph</p> <p>23 down. It starts, "There are some 48,000 workers</p> <p>24 involved in the cleanup operations."</p> <p>25 You would agree with me that this is not</p>
<p style="text-align: right;">102</p> <p>1 cause transient chronotropic effects on cardiac</p> <p>2 function."</p> <p>3 Would you agree with me that in that</p> <p>4 conclusion, the authors of this paper are concluding</p> <p>5 that acute repeated exposure to Corexit did not alter</p> <p>6 any sort of pulmonary function?</p> <p>7 A Yes.</p> <p>8 Q You would agree with me that this study</p> <p>9 is really not a human epidemiological study; correct?</p> <p>10 A It's in -- it's in rats.</p> <p>11 Q It's rats.</p> <p>12 The authors conclude that, at least in</p> <p>13 their study on these rats, that there was no cause of</p> <p>14 effect between exposure to Corexit and lung diseases</p> <p>15 in these rats; is that correct?</p> <p>16 A They were exposed -- yes. Yes. That's</p> <p>17 what they are say --</p> <p>18 Q That's what these authors are saying?</p> <p>19 A Uh-huh.</p> <p>20 Q And this study is really not addressing</p> <p>21 the issue of asthma in human beings; correct?</p> <p>22 A True.</p> <p>23 Q And it certainly doesn't conclude that</p> <p>24 asthma can be caused by exposure to Corexit; is that</p> <p>25 correct?</p>	<p style="text-align: right;">104</p> <p>1 an epidemiological study?</p> <p>2 A This is not. No.</p> <p>3 Q That's just an article in --</p> <p>4 A It's a con --</p> <p>5 Q -- Science Daily?</p> <p>6 A It's a conversation between me and the</p> <p>7 person who called me, the reporter.</p> <p>8 Q Okay. This article or -- or</p> <p>9 conversation doesn't address asthma at all; correct?</p> <p>10 A It seems to express -- no, it doesn't</p> <p>11 use the word "asthma."</p> <p>12 Q Okay.</p> <p>13 A It says, "Cough, shortness of breath and</p> <p>14 sputum production" --</p> <p>15 Q Okay.</p> <p>16 A -- were the symptoms.</p> <p>17 Q But really you're sort of talking about</p> <p>18 your results from your HO1 paper; is that -- is that</p> <p>19 right?</p> <p>20 A That's what they were calling me about.</p> <p>21 But they were trying to extrapolate that work to</p> <p>22 finding out why people were complaining of side</p> <p>23 effects post exposure.</p> <p>24 Q Okay. This -- this article doesn't</p> <p>25 exist to show any --</p>

<p style="text-align: right;">105</p> <p>1 A Cause and effect.</p> <p>2 Q -- cause and effect between Corexit and</p> <p>3 asthma expo -- exposure to Corexit and asthma; is that</p> <p>4 correct?</p> <p>5 A It does not.</p> <p>6 Q Okay. Let's mark this as the next</p> <p>7 exhibit.</p> <p>8 (Exhibit Number 7 was</p> <p>9 marked for identification.)</p> <p>10 Q Doctor, this is another one of your</p> <p>11 reliance articles. It's entitled "Persistent</p> <p>12 respiratory symptoms in clean-up workers 5 years after</p> <p>13 the Prestige oil spill."</p> <p>14 I -- I guess my initial question is:</p> <p>15 Did you read any of the -- of the other prestige oil</p> <p>16 spill studies, or was this the only one that you</p> <p>17 reviewed?</p> <p>18 A This is the only one that I reviewed.</p> <p>19 Q Okay. And when you look at this study,</p> <p>20 would you agree with me that this study is addressing</p> <p>21 an oil spill off the coast of Spain?</p> <p>22 A Uh-huh.</p> <p>23 Q And would you agree with me that this is</p> <p>24 not dealing with the same type of oil that was present</p> <p>25 in the Deepwater Horizon spill?</p>	<p style="text-align: right;">107</p> <p>1 Q And we talked earlier about, you know,</p> <p>2 some of the problems with using a cross-sectional</p> <p>3 study to establish causation.</p> <p>4 Do you know if this study addresses the</p> <p>5 type of dispersant that was used in the cleanup, if</p> <p>6 any dispersant at all was used in the cleanup?</p> <p>7 A Of the Prestige oil spill?</p> <p>8 Q Yes.</p> <p>9 A I think these were people who were --</p> <p>10 that worked in the area, but I don't think there was a</p> <p>11 dispersant used.</p> <p>12 Q I guess my -- my point in -- in asking</p> <p>13 that question is: Because we don't know the type of</p> <p>14 dispersant that was used, this is not a paper that we</p> <p>15 can use to -- to demonstrate that exposure to Corexit</p> <p>16 can cause asthma in a human population; is that</p> <p>17 correct?</p> <p>18 A I think that's a right statement.</p> <p>19 However, this is a large -- large study and was follow</p> <p>20 -- 400 -- five -- almost 500 people over who were</p> <p>21 involved in the cleanup of the oil spill, and they had</p> <p>22 persistent symptoms, pulmonary symptoms, after the oil</p> <p>23 spill.</p> <p>24 Q Well --</p> <p>25 A 466 fishermen.</p>
<p style="text-align: right;">106</p> <p>1 A Same type of oil?</p> <p>2 Q Right. Well --</p> <p>3 A I don't know that.</p> <p>4 Q Yeah.</p> <p>5 A Were the molecules the same? I don't</p> <p>6 know that. I mean, it's crude oil; right?</p> <p>7 Q Well, are you aware that there are</p> <p>8 different types of crude oil?</p> <p>9 A Yes.</p> <p>10 Q Okay. And that the --</p> <p>11 A It was a boat. Yeah.</p> <p>12 Q And this -- this type of oil was</p> <p>13 something called Bunker 2 Fuel Oil, and it's different</p> <p>14 than the Macondo Oil in the Deepwater Horizon spill.</p> <p>15 Do you know that?</p> <p>16 A Yes. I --</p> <p>17 Q Okay.</p> <p>18 A I know the name of the oil that was in</p> <p>19 the Deepwater Horizon spill.</p> <p>20 Q Okay.</p> <p>21 A Yes.</p> <p>22 Q And would you agree with me that this is</p> <p>23 -- this -- this Prestige oil spill study, the one that</p> <p>24 you've cited, is a cross-sectional study?</p> <p>25 A Yes.</p>	<p style="text-align: right;">108</p> <p>1 Q Well, let's look an Table 1 on page 510.</p> <p>2 A (Witness complies.)</p> <p>3 Q And they -- they have a table there.</p> <p>4 And so they -- they have the incidence</p> <p>5 of asthma in exposed persons at seven percent.</p> <p>6 Do you see that?</p> <p>7 A Uh-huh.</p> <p>8 Q And they have the incident of asthma in</p> <p>9 non-exposed persons at 10 percent.</p> <p>10 Do you see that?</p> <p>11 A Ever asthma?</p> <p>12 Q Right.</p> <p>13 A Is that what you're looking at?</p> <p>14 Q Yeah. Yes.</p> <p>15 A Yeah.</p> <p>16 Q And so I'm looking at the exposed</p> <p>17 population, and it says the incidence would be seven</p> <p>18 percent --</p> <p>19 A Right.</p> <p>20 Q -- in the exposed.</p> <p>21 A Yeah.</p> <p>22 Q But it's ten percent --</p> <p>23 A Right.</p> <p>24 Q -- in the non-exposed.</p> <p>25 A Right.</p>

<p style="text-align: right;">109</p> <p>1 Q Do you see that?</p> <p>2 A Right. Right.</p> <p>3 Q So that suggests -- or would you agree</p> <p>4 with me that that suggests that there are no greater</p> <p>5 incidence of asthma in exposed persons than there is</p> <p>6 in non-exposed person's?</p> <p>7 A I think this is the baseline.</p> <p>8 Q What do you mean by that?</p> <p>9 A This is before -- this is before -- this</p> <p>10 is the demographic and respiratory health</p> <p>11 characteristics of the study population of -- prior to</p> <p>12 the exposure; right?</p> <p>13 Q Well, no. Because they've broken it up</p> <p>14 between exposed persons and non-exposed persons.</p> <p>15 You see the -- the two categories?</p> <p>16 A Yes. Yes. Yes. Yes. So they had the</p> <p>17 same amount of asthma, I agree seven to ten percent</p> <p>18 difference. And this one says that they -- yeah. But</p> <p>19 they came to that conclusion some way. They had lower</p> <p>20 respiratory tract symptoms, nasal symptoms. Yes.</p> <p>21 What you just said is true that the exposed people had</p> <p>22 seven percent, and the non-exposed people had ten</p> <p>23 percent of --</p> <p>24 Q So base.</p> <p>25 A -- of ever having had asthma. However,</p>	<p style="text-align: right;">111</p> <p>1 exhibit.</p> <p>2 (Exhibit Number 8 was</p> <p>3 marked for identification.)</p> <p>4 Q Doctor, this is a study entitled</p> <p>5 "Respiratory, Dermal, and Eye Irritation Symptoms</p> <p>6 Associated with Corexit EC9527A" and "EC9500A</p> <p>7 following the" DWH, "Deepwater Horizon Oil Spill:</p> <p>8 Findings from the GuLF STUDY."</p> <p>9 Are you familiar with the Gulf Study?</p> <p>10 A Uh-huh.</p> <p>11 Q And would you agree with me that there</p> <p>12 have been several studies that have come out of this</p> <p>13 Gulf Study population?</p> <p>14 A Yes.</p> <p>15 Q Have you reviewed any of the other</p> <p>16 studies that came out of the Gulf Study population</p> <p>17 besides this one?</p> <p>18 A I'm sure I have, but I don't recall</p> <p>19 which one per se right now.</p> <p>20 Q And would you agree with me that this is</p> <p>21 a cross-sectional study, which we've talked about you</p> <p>22 can't use those to establish causation between</p> <p>23 exposures and disease processes.</p> <p>24 Would you agree with that?</p> <p>25 A I said that they were occasions where</p>
<p style="text-align: right;">110</p> <p>1 there were all these other symptoms that they had --</p> <p>2 that they had that the -- this study says that they</p> <p>3 did. That's the bottom line with this -- of the study</p> <p>4 that it says that they did end up having respiratory</p> <p>5 symptoms but may or may not -- that may or may not</p> <p>6 come under the umbrella of asthma.</p> <p>7 Q Okay.</p> <p>8 A So they have -- they have an excess risk</p> <p>9 of respiratory symptoms.</p> <p>10 Q But not asthma?</p> <p>11 A Does the word "asthma"? Right. Yes.</p> <p>12 Q Okay. And because of that, you wouldn't</p> <p>13 rely on this study to say that there's an increased</p> <p>14 incident of asthma in the exposed population versus</p> <p>15 the non-exposed population?</p> <p>16 A Of asthma? No. But of symptoms that</p> <p>17 are -- make up the constellation of asthma? Yes.</p> <p>18 Q But since we don't know if Corexit was</p> <p>19 used in the prestige oil spill study --</p> <p>20 A Yes.</p> <p>21 Q -- it doesn't mean that Corexit caused</p> <p>22 asthma or any of these respiratory symptoms; correct?</p> <p>23 A Correct.</p> <p>24 Q Okay.</p> <p>25 MR. MCLEOD: Let's mark this as the next</p>	<p style="text-align: right;">112</p> <p>1 you would have to -- depending on time of exposure and</p> <p>2 then the development of disease, it may change; but</p> <p>3 yes.</p> <p>4 Q And in -- and in this -- in this</p> <p>5 study --</p> <p>6 A Uh-huh.</p> <p>7 Q -- this -- this piece of literature;</p> <p>8 even by its very title, they're not really talking</p> <p>9 about disease processes here. They're really talking</p> <p>10 about symptoms.</p> <p>11 Would you agree with me?</p> <p>12 A Yes. I think symptoms of disease</p> <p>13 related to the eventual name that you give this</p> <p>14 constellation of symptoms and call it a disease.</p> <p>15 Q When I look on page two, I guess it's in</p> <p>16 the second full paragraph that starts "Using in vitro</p> <p>17 cultures."</p> <p>18 A Right.</p> <p>19 Q That last sentence in that paragraph</p> <p>20 reads "We were unable to find any study of direct</p> <p>21 effects of either 9500A or 9527A on human health."</p> <p>22 Would you agree with me that the authors</p> <p>23 are saying that there are no studies addressing direct</p> <p>24 effects of Corexit on human health?</p> <p>25 A Yes. Of Corexit alone. Yes.</p>

<p style="text-align: right;">113</p> <p>1 Q Okay. If you turn to page six.</p> <p>2 A (Witness complies.)</p> <p>3 Q On the very bottom of the -- of the</p> <p>4 left-hand column on page six --</p> <p>5 A Uh-huh.</p> <p>6 Q -- the -- the sentence starts "However,</p> <p>7 our approach relied almost entirely on self-reported</p> <p>8 data, which provides several opportunities for bias."</p> <p>9 You agree with me that -- that the</p> <p>10 authors are acknowledging there are limitations to</p> <p>11 this study?</p> <p>12 A Yes.</p> <p>13 Q And one of the limitations of this study</p> <p>14 is selection bias.</p> <p>15 Would you agree with that?</p> <p>16 A It's not selection bias. I think it's</p> <p>17 the bias of, perhaps, the -- the people that were</p> <p>18 chosen to say that they had a problem. Yeah.</p> <p>19 Q Well, in this case, it's self-reported</p> <p>20 so --</p> <p>21 A Yes. So it is a problem of who they</p> <p>22 picked. Yeah.</p> <p>23 Q Right. Well, they picked themselves</p> <p>24 kind --</p> <p>25 A Yes.</p>	<p style="text-align: right;">115</p> <p>1 A (No response.)</p> <p>2 Q That in order for -- to say something</p> <p>3 was caused by --</p> <p>4 A Uh-huh. Something.</p> <p>5 Q -- something, the effect needs to follow</p> <p>6 the cause; correct?</p> <p>7 A Right.</p> <p>8 Q And in this case, we don't know if these</p> <p>9 people had these symptoms prior to the oil spill or</p> <p>10 not because we don't have any medical histories on</p> <p>11 these people?</p> <p>12 A Yes.</p> <p>13 Q Okay.</p> <p>14 A But there is -- I mean, this -- this</p> <p>15 study says that they -- that there were several people</p> <p>16 who complained of symptoms related to respiratory,</p> <p>17 dermal, and eye irritation following the Deepwater</p> <p>18 Horizon spill and cleanup. That's what this study</p> <p>19 says.</p> <p>20 Q Right. But we have no idea if they had</p> <p>21 prior medical history of -- prior medical issues prior</p> <p>22 to the spill; correct?</p> <p>23 A No.</p> <p>24 Q And we don't know if they were smokers?</p> <p>25 A True.</p>
<p style="text-align: right;">114</p> <p>1 Q -- of; correct?</p> <p>2 A And then came to them and said they had</p> <p>3 problems. Yes.</p> <p>4 Q Okay. And would you agree with me this</p> <p>5 study never tried to quantify dose or exposure?</p> <p>6 A No.</p> <p>7 Q No, they didn't --</p> <p>8 A No.</p> <p>9 Q -- or, no, you don't agree with me?</p> <p>10 A I don't think they did.</p> <p>11 Q Okay.</p> <p>12 A It's just the spill and symptoms.</p> <p>13 Q So another limitation to this study is</p> <p>14 we -- we have no idea what levels, if any, these</p> <p>15 people were exposed to.</p> <p>16 Would you agree with that?</p> <p>17 A Yes.</p> <p>18 Q And would you agree with me that we have</p> <p>19 no information related to any of the health conditions</p> <p>20 of these people prior to their work in the Gulf</p> <p>21 cleanup?</p> <p>22 A True.</p> <p>23 Q And we talked earlier about the</p> <p>24 significance of, in a -- in a causal relationship,</p> <p>25 having the cause precede the effect; correct?</p>	<p style="text-align: right;">116</p> <p>1 Q We don't know if they had other medical</p> <p>2 problems that might also cause eye irritation or</p> <p>3 anything else? We just don't know.</p> <p>4 Would you agree with me?</p> <p>5 A Yes.</p> <p>6 Q And that's one of the limitations -- or</p> <p>7 some of the limitations of this study?</p> <p>8 A Yes.</p> <p>9 Q Were you aware that the EPA has a</p> <p>10 systematic review guideline to grade different levels</p> <p>11 of epidemiological studies as to their -- their</p> <p>12 ability to be used?</p> <p>13 A Yes. They change a lot with the people</p> <p>14 in command.</p> <p>15 Q Well, are you aware that this study was</p> <p>16 rated by the EPA guidelines -- systematic guidelines?</p> <p>17 A I'm assuming it may have been because it</p> <p>18 was a clinical study.</p> <p>19 Q Yeah. Do you -- were you aware that it</p> <p>20 was rated as poor?</p> <p>21 A Possibly.</p> <p>22 Q And the reason they gave that it was</p> <p>23 rated as poor was because of all the bias that existed</p> <p>24 in here.</p> <p>25 Does that make sense to you that that</p>

<p style="text-align: right;">117</p> <p>1 would cause this study to be --</p> <p>2 A Yes.</p> <p>3 Q -- rated as poor?</p> <p>4 This study does not attempt to suggest</p> <p>5 that Corexit causes asthma in human beings, does it?</p> <p>6 A Not at all.</p> <p>7 Q And you wouldn't use this study to state</p> <p>8 a general causation opinion that Corexit can cause</p> <p>9 asthma in human beings; correct?</p> <p>10 A That it cannot or does not?</p> <p>11 Q That it -- that it cannot or does not?</p> <p>12 A Cannot or does not? No. I -- yes.</p> <p>13 Yes, you're right. Yes. I see this as a study</p> <p>14 showing that people who were exposed to this Corexit</p> <p>15 oil spill and the oil spill and the cleanup had</p> <p>16 respiratory symptoms. That's all it tells me.</p> <p>17 Q Okay.</p> <p>18 MR. MCLEOD: Let's mark this as the next</p> <p>19 exhibit.</p> <p>20 (Exhibit Number 6 was</p> <p>21 marked for identification.)</p> <p>22 Q Doctor, this is another one of the</p> <p>23 pieces of reliance literature that you used in your</p> <p>24 report. It's the -- entitled "The Development of</p> <p>25 Long-Term Adverse Health Effects in Oil Spill Cleanup</p>	<p style="text-align: right;">119</p> <p>1 following limitations"?</p> <p>2 A Yeah.</p> <p>3 Q And -- and this is the -- where the --</p> <p>4 the authors of this study are -- are talking about</p> <p>5 here are some of the limitations of our study; is that</p> <p>6 correct?</p> <p>7 A Uh-huh.</p> <p>8 Q And they talk about selection bias.</p> <p>9 Do you agree?</p> <p>10 A Uh-huh.</p> <p>11 Q And when we talk about selection bias in</p> <p>12 this context, you would agree with me that that is</p> <p>13 that persons that are likely to suffer from certain</p> <p>14 symptoms are more likely to respond to the</p> <p>15 questionnaire and the -- and the surveys that they</p> <p>16 use?</p> <p>17 Is that -- is that your understanding of</p> <p>18 selection bias in this limitation -- in this study?</p> <p>19 A Yes. It would be the selection bias.</p> <p>20 Yeah.</p> <p>21 Q And would you also agree with me that</p> <p>22 one of the limitations that the authors have in this</p> <p>23 study is they don't really address any confounding</p> <p>24 factors?</p> <p>25 Do you know what I mean when I say</p>
<p style="text-align: right;">118</p> <p>1 Workers of the Deepwater Horizon Offshore Drilling Rig</p> <p>2 Disaster" by D'Andrea and Reddy.</p> <p>3 You would agree with me that this is a</p> <p>4 cross-sectional study?</p> <p>5 A Yes.</p> <p>6 Q And we've talked about, you know, some</p> <p>7 of the -- the problems of using a cross-sectional</p> <p>8 study to determine causation.</p> <p>9 Would you agree with me that we've</p> <p>10 talked about that?</p> <p>11 A Yes.</p> <p>12 Q Would you also agree with me that this</p> <p>13 study has a very small sample size of people?</p> <p>14 A 88?</p> <p>15 Q Well, I believe it's 44.</p> <p>16 A Well, unexposed were 44, and the cleanup</p> <p>17 workers were 44. Yeah.</p> <p>18 Q Right. So in terms of the exposed</p> <p>19 number, it's -- it's only 44 persons.</p> <p>20 You -- you would agree?</p> <p>21 A True. Yes.</p> <p>22 Q On page six, the authors are -- are --</p> <p>23 and I guess I should point you to the right-hand</p> <p>24 column about three fourths of the way down. It -- it</p> <p>25 starts the sentence -- or the paragraph starts "The</p>	<p style="text-align: right;">120</p> <p>1 "confounding factors"?</p> <p>2 A Yes. Yes.</p> <p>3 Q They don't deal with an occupational</p> <p>4 history here; correct? And they don't address</p> <p>5 smoking, and they don't talk about other human health</p> <p>6 issues that may have pre-existed the oil spill.</p> <p>7 Do you agree with that?</p> <p>8 A That's true.</p> <p>9 Q And would you agree with me that this</p> <p>10 study doesn't address the issue of asthma being caused</p> <p>11 by exposure to Corexit?</p> <p>12 A It says they did develop reactive</p> <p>13 airways dysfunction syndrome. I'll point you to page</p> <p>14 six paragraph two halfway down -- little down below</p> <p>15 the -- halfway down below the -- right there.</p> <p>16 Q And --</p> <p>17 A There (indicating). They talk about</p> <p>18 reactive airway diseases, which is another word for</p> <p>19 asthma.</p> <p>20 Q Okay. Well, tell me what -- tell me</p> <p>21 what reactive airways dysfunction syndrome means to a</p> <p>22 pulmonologist.</p> <p>23 A Asthma.</p> <p>24 Q That's not RADS, different than reactive</p> <p>25 airway disease?</p>

<p style="text-align: right;">121</p> <p>1 A It is reactive airways disease. Yeah.</p> <p>2 Q So it's your opinion that reactive</p> <p>3 airways dysfunction syndrome is the same as --</p> <p>4 A Yes.</p> <p>5 Q -- reactive airways disease?</p> <p>6 A Yes.</p> <p>7 Q Okay. There's no difference in those</p> <p>8 two terms to you?</p> <p>9 A No.</p> <p>10 Q You would agree with me that there's no</p> <p>11 attempt in this study to establish any level of dose?</p> <p>12 A Right.</p> <p>13 Q And so we don't know if the persons in</p> <p>14 this study were exposed to micrograms of Corexit or</p> <p>15 high levels of Corexit.</p> <p>16 Would you agree with me there?</p> <p>17 A Yes.</p> <p>18 MR. MCLEOD: Let's mark this.</p> <p>19 (Exhibit Number 10 was</p> <p>20 marked for identification.)</p> <p>21 Q Doctor, this is one of the studies you</p> <p>22 relied upon: "The impact of oil spill to lung health</p> <p>23 - Insights from an RNA-seq study of human airway</p> <p>24 epithelial cells."</p> <p>25 Do you -- you agree with me that I read</p>	<p style="text-align: right;">123</p> <p>1 study that you cited in your expert report that we've</p> <p>2 marked as Exhibit 11; and I want to let you take a</p> <p>3 look at it. It's entitled "The Impact of the</p> <p>4 Deepwater Horizon Oil Spill upon Lung Health" and then</p> <p>5 it's a "Mouse Model-Based RNA-seq Analyses."</p> <p>6 So from the title of this, we know that</p> <p>7 this is not a study on human beings. This is not an</p> <p>8 epidemiological study on humans; correct?</p> <p>9 A Yes. Correct.</p> <p>10 Q In fact, what this is doing, this study,</p> <p>11 if I'm looking at this correctly; they're actually</p> <p>12 looking at the carcinogenic effects, if any, on -- of</p> <p>13 Corexit on mice.</p> <p>14 Is that correct?</p> <p>15 A Yes, sir. Yes, they are. They're also</p> <p>16 looking at the signaling pathways of the cytokine</p> <p>17 release. Both the previous study and this one are</p> <p>18 both looking at what -- when you examine the RNA of --</p> <p>19 of mice lungs or mice cells that have been exposed to</p> <p>20 oil or Corexit, they cause what -- what pathways get</p> <p>21 activated.</p> <p>22 Q Okay. And like the study before it --</p> <p>23 A Yes.</p> <p>24 Q -- this is not a -- a study of -- of</p> <p>25 asthma in human beings; correct?</p>
<p style="text-align: right;">122</p> <p>1 that correctly --</p> <p>2 A Yes.</p> <p>3 Q -- because I'm not sure I did?</p> <p>4 A Yes.</p> <p>5 Q And you would agree with me this is not</p> <p>6 an epidemiological study regarding human beings and</p> <p>7 potential adverse health effects?</p> <p>8 A Yes.</p> <p>9 Q And this does not examine an exposed</p> <p>10 versus unexposed human population; correct?</p> <p>11 A Yes.</p> <p>12 Q And we're not addressing asthma in this</p> <p>13 study in an attempt to show that Corexit causes asthma</p> <p>14 in human beings.</p> <p>15 Would you agree with that?</p> <p>16 A It's not a human study at all. Yes.</p> <p>17 Q All right. And so you wouldn't use this</p> <p>18 study as the basis of a general causation opinion that</p> <p>19 Corexit could cause asthma in human beings because</p> <p>20 that's not what this study is addressing; correct?</p> <p>21 A Right. This -- yes.</p> <p>22 Q And then let's mark that as an exhibit.</p> <p>23 (Exhibit Number 11 was</p> <p>24 marked for identification.)</p> <p>25 Q Doctor, this is, I believe, the last</p>	<p style="text-align: right;">124</p> <p>1 A Yes.</p> <p>2 Q And it's not a study that you would use</p> <p>3 to form a general causation opinion that Corexit</p> <p>4 exposure can cause asthma in human beings; correct?</p> <p>5 A Correct.</p> <p>6 MR. MCLEOD: Let's go off the record.</p> <p>7 THE VIDEOGRAPHER: We're off the record.</p> <p>8 The time is 3:46 p.m.</p> <p>9 (Short recess.)</p> <p>10 THE VIDEOGRAPHER: We are back on the</p> <p>11 record. The time is now 3:49 p.m.</p> <p>12 Q Thank you for your time. I appreciate</p> <p>13 that. I think those are all the questions that I have</p> <p>14 for right now. I know your attorney is going to have</p> <p>15 some questions, and I reserve the right to come back</p> <p>16 and -- and ask questions after he asks questions.</p> <p>17 But I appreciate your time and -- and</p> <p>18 thank you very much.</p> <p>19 A You're welcome.</p> <p>20 EXAMINATION</p> <p>21 BY MR. BURGER:</p> <p>22 Q Dr. Anthony, I have some very broad and,</p> <p>23 I hope, very brief questions just to -- to clarify</p> <p>24 some of what you have said earlier in your testimony.</p> <p>25 I want to begin by asking you if you</p>

<p style="text-align: right;">125</p> <p>1 have any way of knowing the truth about where Corexit 2 was dispersed, how much was dispersed on any 3 particular day at any particular location as a result 4 of the Deepwater Horizon spill? 5 Do you have any way of knowing that? 6 A No, I don't. 7 Q You don't know whether my client, John 8 Maas, is an honest or truthful person one way or the 9 other, do you? 10 A I don't. 11 Q You don't -- for that matter, you don't 12 know whether I'm an honest or truthful person. We've 13 talked briefly only on the phone. 14 You don't know whether I have told you 15 the truth about these facts or not, do you? 16 A I don't. 17 Q But you have read Mr. Maas's affidavit? 18 A Yes. 19 Q And you have read the materials that 20 were sent to you on the zip drive, same -- 21 A Yes. 22 Q -- materials provided to you? 23 You have read those materials? 24 A Yes. 25 Q And you know what facts are asserted by</p>	<p style="text-align: right;">127</p> <p>1 A No. Not at all. 2 Q Do you -- on that point; as with 3 Mr. Maas's recollection of the facts, do you have any 4 knowledge of the details due to your -- in your 5 research, any details of the criminal charges to which 6 BP pled in relation to the -- the -- broadening the 7 Deepwater Horizon issue? 8 MR. MCLEOD: Object to the form. 9 MR. JARVIS: I would add: What has that 10 got to do with the price of eggs in China? But go 11 ahead. 12 MR. BURGER: It will have to do with the 13 credibility instruction -- 14 MR. JARVIS: oh -- 15 MR. BURGER: -- that goes to the jury -- 16 MR. JARVIS: -- okay. 17 MR. BURGER: -- from Judge Waverly in 18 this case. 19 MR. MCLEOD: Ken, I can tell you that 20 pursuant to the medical settlement agreement, it will 21 not; but object to the form. 22 MR. BURGER: We'll cross that bridge as 23 we come to it. 24 MR. MCLEOD: I understand. 25 Q (By Mr. Burger) But do you know</p>
<p style="text-align: right;">126</p> <p>1 Mr. Maas -- 2 A Yes. 3 Q -- to have happened? 4 Maybe they're true; maybe they're not 5 until someone shows you otherwise? Right? 6 A Yes. 7 Q But you have predicated your opinions in 8 this affidavit on the assumption that Mr. Maas has 9 told you the truth about what he and his coworkers 10 experienced? 11 A Yes. 12 Q Admonishing us all, as you do that, that 13 that may be true; it may not be true? 14 A Yeah. Right. 15 Q Same point, I would ask you: Do you -- 16 do you have any way of knowing -- in the context of 17 Corexit distribution in the 12-week period following 18 the Deepwater Horizon spill, do you have any way of 19 knowing whether BP's factual statements about what it 20 did with regard to Corexit and, more importantly, how 21 it documented it, what it documented; do you have any 22 way of knowing whether BP was truthful or accurate or 23 complete in its activities involving Corexit? 24 MR. MCLEOD: Object to the form. 25 Q Any way of knowing that?</p>	<p style="text-align: right;">128</p> <p>1 anything about the criminal charges as to what was 2 true or not true? 3 A Yeah. I -- yes. What I know is what I 4 read in The New York times 5 Q Well, I won't ask you to quote that 6 unless you have any other direct information. 7 A Yes. I know that BP was charged with a 8 lot of things and had to admit to a lot of things. 9 Q What does the term "apoptosis" means -- 10 mean, a-p-o-p-t-o-s-i-s? 11 What's the medical definition of 12 apoptosis? 13 A Cell death. 14 Q How does apoptosis relate broadly and 15 generally to the layman's description of -- of asthma? 16 A So if the -- if the respiratory 17 epithelial surfaces that cover the breathing tubes, 18 the airways; if that -- those cells die, then there is 19 an enormous -- it's a defense mechanism. The 20 epithelium is a barrier to the -- and a protection 21 barrier -- protective barrier to the transgression of 22 any materials in -- deeper into the lung tissue. And 23 if that respiratory epithelium is destroyed, then 24 materials can go deeper into the lung tissue. 25 Q And let me clarify that or ask you to</p>

<p style="text-align: right;">129</p> <p>1 break that down a bit.</p> <p>2 To what extent does the function of</p> <p>3 apoptosis involve the onset and development of asthma?</p> <p>4 A Oh, cellular apoptosis plays a very</p> <p>5 critical and important role in asthma. It -- people</p> <p>6 who have asthma have a higher propensity for cell</p> <p>7 death of the -- of the respiratory epithelium.</p> <p>8 Q In any of these questions that have been</p> <p>9 put to you regarding the use of the word -- the</p> <p>10 layman's term "asthma"; in those articles that refer</p> <p>11 to the process of apoptosis, how does that relate to</p> <p>12 asthma?</p> <p>13 A It -- it relates as significantly as --</p> <p>14 as a pathological event that occurs during the process</p> <p>15 of asthma.</p> <p>16 Q Is epithelial cell damage equivalent --</p> <p>17 medically equivalent to the generic medical term</p> <p>18 "asthma"?</p> <p>19 A Epithelial -- respiratory epithelial</p> <p>20 cell damage can lead to asthma.</p> <p>21 Q Can you have asthma, as we generally use</p> <p>22 that generic term, without having some epithelial cell</p> <p>23 damage?</p> <p>24 A No.</p> <p>25 Q So if there's asthma, there's epithelial</p>	<p style="text-align: right;">131</p> <p>1 serious harm in a human?</p> <p>2 A No.</p> <p>3 Q So whether a person breathes tiny</p> <p>4 amounts of Corexit 9500 for five minutes or less or</p> <p>5 continuously over a two-month period, does that make</p> <p>6 any difference in the enhancement of the likelihood</p> <p>7 that the person is going to have long-term chemical</p> <p>8 asthma?</p> <p>9 MR. MCLEOD: Object to the form.</p> <p>10 A I think they would have long -- some</p> <p>11 long-term effects. Yes.</p> <p>12 Q Regardless of how short a period of</p> <p>13 time?</p> <p>14 A Yes.</p> <p>15 Q Or how small a dosage?</p> <p>16 A Yes.</p> <p>17 MR. MCLEOD: Object to the form.</p> <p>18 Q And -- and in -- can you give us a</p> <p>19 layman's description of what it is in your studies</p> <p>20 that supports that conclusion you just now expressed.</p> <p>21 A Well, what we found was that when we</p> <p>22 used parts per million, very, very tiny parts per</p> <p>23 million, like 50 parts per million, which would be --</p> <p>24 which would be almost like nonexistent; we found that</p> <p>25 there was damage to the respiratory epithelium of</p>
<p style="text-align: right;">130</p> <p>1 cell damage?</p> <p>2 A Yes.</p> <p>3 Q So when we see in an article reference</p> <p>4 to epithelial cell damage, is that a -- an equivalent</p> <p>5 reference to the broad general layman's term "asthma"?</p> <p>6 MR. MCLEOD: Object to the form.</p> <p>7 A Yes.</p> <p>8 Q And same thing in the concept of</p> <p>9 apoptosis?</p> <p>10 A Yes.</p> <p>11 Q Do all -- in your research, your</p> <p>12 experience, are there any forms of crude oil</p> <p>13 dispersants, Corexit or not, that when inhaled will</p> <p>14 not produce apoptosis?</p> <p>15 A I have not tested them -- many -- any</p> <p>16 others beside Corexit 9500 myself. But, yes, I</p> <p>17 believe that dispersants, by their very nature, will</p> <p>18 cause epithelial damage and cell death.</p> <p>19 Q Do you know any -- well, let me strike</p> <p>20 that question.</p> <p>21 In -- in a -- in the medical evaluation,</p> <p>22 research and clinical medical evaluation of a</p> <p>23 potential harm from Corexit; in your opinion, is the</p> <p>24 concept of dosage, does it have any -- any factor at</p> <p>25 all in -- in the likelihood of the development of</p>	<p style="text-align: right;">132</p> <p>1 humans and fish gills, the respiratory organs of</p> <p>2 multiple organisms, both mammals and water creatures.</p> <p>3 Q Are you aware of -- as broadly as we can</p> <p>4 make it, are you aware of any studies out there that</p> <p>5 deal specifically with the issue of the dosage of</p> <p>6 Corexit as it relates to harm to the human respiratory</p> <p>7 system?</p> <p>8 Any specific studies?</p> <p>9 A No.</p> <p>10 Q Do you do experiments on human beings</p> <p>11 here at the University of Alabama?</p> <p>12 A I mean, we do research with them;</p> <p>13 clinical trials, et cetera.</p> <p>14 Q Do you -- do you do experiments --</p> <p>15 A Exposure studies? We do not do</p> <p>16 exposures studies on humans.</p> <p>17 Q Is that considered ethical in the</p> <p>18 medical world to do experiments on people that -- that</p> <p>19 would -- from a baseline that would determine in a</p> <p>20 healthy person whether --</p> <p>21 A No.</p> <p>22 Q -- what dosage would it take of Corexit</p> <p>23 to --</p> <p>24 A No.</p> <p>25 Q -- cause asthma?</p>

<p style="text-align: right;">133</p> <p>1 A It should not be done.</p> <p>2 Q All right. Is it -- is it legal and</p> <p>3 ethical in --</p> <p>4 A No.</p> <p>5 Q -- in the context of your medical</p> <p>6 training?</p> <p>7 A It's not. No, it would not be. It</p> <p>8 would not pass our institutional review board.</p> <p>9 Q Okay. So what is the alternative?</p> <p>10 If you can't bring in a willing human</p> <p>11 being to breathe Corexit to see what happens; what's</p> <p>12 your alternative, Dr. Anthony?</p> <p>13 MR. MCLEOD: Object to the form.</p> <p>14 A Well, the studies that -- we do studies</p> <p>15 in vitro; or we do studies in animals, in mice.</p> <p>16 Q In your opinion, are the studies in</p> <p>17 vitro reliably transferable in their general and</p> <p>18 specific causation conclusions to an unethical</p> <p>19 experiment on a human being?</p> <p>20 MR. MCLEOD: Object to the form.</p> <p>21 A Yes. I agree that in vitro studies can</p> <p>22 be used to predict what will happen to a person who is</p> <p>23 breathing in a toxic element, whatever I was studying.</p> <p>24 Q And, again, from a layman's perspective</p> <p>25 as best you can make it; was there anything about the</p>	<p style="text-align: right;">135</p> <p>1</p> <p>2 C E R T I F I C A T E</p> <p>3</p> <p>4 STATE OF ALABAMA)</p> <p>5 JEFFERSON COUNTY)</p> <p>6</p> <p>7 I hereby certify that the above</p> <p>8 and foregoing deposition was taken down</p> <p>9 by me in stenotype, and the questions and</p> <p>10 answers thereto were reduced to computer</p> <p>11 print under my supervision, and that the</p> <p>12 foregoing represents a true and correct</p> <p>13 transcript of the deposition given by</p> <p>14 said witness upon said hearing.</p> <p>15</p> <p>16 I further certify that I am</p> <p>17 neither of counsel nor of kin to the</p> <p>18 parties to the action, nor am I in</p> <p>19 anywise interested in the result of said</p> <p>20 cause.</p> <p>21</p> <p>22</p> <p>23 <i>Merit Gilley</i></p> <p>24 _____</p> <p>25 Merit Gilley, Commissioner</p> <p>ACCR NO. 67</p>
<p style="text-align: right;">134</p> <p>1 studies that you and your colleagues performed in</p> <p>2 vitro that would suggest that those conclusions were</p> <p>3 not reasonably transferable from a medical causation</p> <p>4 perspective to --</p> <p>5 A Not at --</p> <p>6 Q -- harm to the human body?</p> <p>7 MR. MCLEOD: Object to the form.</p> <p>8 A Not at all. Because -- because the</p> <p>9 studies that we did were specific to the pathological</p> <p>10 effects that occurred during the process of an acute</p> <p>11 asthma attack, which is changes in permeability of an</p> <p>12 airway which is what happens in human with asthma.</p> <p>13 And we've showed that the same thing happens in a test</p> <p>14 tube.</p> <p>15 Q Those are all of my questions I have.</p> <p>16 Thank you.</p> <p>17 MR. MCLEOD: Thank you very much.</p> <p>18 THE VIDEOGRAPHER: This ends the</p> <p>19 deposition of Dr. Veena Anthony. The time is now</p> <p>20 4:01 p.m.</p> <p>21 (THE DEPOSITION WAS CONCLUDED AT 4:01 P.M.)</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	

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